RealNetworks

REALPRODUCER PLUS™ USER'S GUIDE

Version 8.0 for Macintosh

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INTRODUCTION TO REALPRODUCER PLUS

Welcome to RealProducer Plus from RealNetworks. This tool converts standard audio and video into streaming media clips. Utilizing easy-to-use assistants, a simple interface, and customizable settings, RealProducer Plus is perfect for either novice or advanced content creators.

Using RealProducer Plus, anyone can easily create streaming media from a variety of sources. Convert audio or video files, record directly from media devices, or use RealProducer Plus to broadcast and stream live content.

In addition to creating RealMedia, you can also use this tool to publish your streaming media directly to the Internet. These publishing features allow you to add the dimensions of sight and sound to your Web site or e-mail. Use RealProducer Plus to instantly demonstrate a product, broadcast a speech, or show home videos.

New Features

This version of RealProducer Plus includes new features that allow you to:

- create video clips with new RealVideo® 8.0 compression
- create clips for audiences at higher bandwidths
- use a variety of filters on video content
- use new two-pass encoding, creating better output for static files
- edit information for a RealMedia file

About This Manual

Chapter 1: Installing RealProducer Plus explains installation procedures and provides information about system requirements for installing and using RealProducer Plus.

Chapter 2: Streaming Media Basics introduces you to the RealSystem and its components, describes the importance of knowing your audience, and shows you how SureStream works.

Chapter 3: Using RealProducer Plus explains how to create streaming media from existing files or live video and audio. It also describes how to monitor the recording process.

Chapter 4: Publishing to the Internet discusses how to generate streaming media-enabled Web pages and publish those Web pages to a server.

Chapter 5: Customizing Recording Options explains how to change RealProducer Plus preferences, how to modify target audience settings, and how to change audio and video capture settings.

Chapter 6: Recording Tips provides information for increasing performance, using RealProducer Plus more effectively, creating high-quality audio and video, and editing file information.

Chapter 7: Using AppleScript shows you how to use the RealProducer Plus script commands.

For More Information

For additional information about using streaming media effectively and how to create multimedia presentations with your clips, refer to the *RealSystem Production Guide*, available for download from the RealNetworks Web site at:

- **http://service.real.com/help/library/index.html**

For technical support with RealSystem, please fill out the form at:

- **http://service.real.com/contact/email.htm**

The information you provide in this form will help technical support personnel to give you a prompt response. For general information about RealNetworks' technical support, visit:

- **http://service.real.com/help/call.html**

INSTALLING REALPRODUCER PLUS

Installing RealProducer Plus is quick and easy. You can download RealProducer Plus from the RealNetworks Website or install it from a CD-ROM. This chapter outlines what you need to run RealProducer Plus and shows you how to install it on your computer.

System Requirements

This section outlines the basic hardware and software requirements needed to run RealProducer Plus.

Requirements for Recording from Files

The following table lists the minimum and the recommended requirements for converting existing audio and video files into RealMedia files:

Recording from Files

Requirement	Minimum	Recommended
CPU	Power PC® 604 or 603	Power PC G3
Operating System	MacOS 8.6 or later	MacOS 8.6 plus QuickTime 4.0
RAM	32 MB	64 MB
Hard Disk space (software)	8 MB	
Hard Disk space (data)	10 MB free	1 GB free
Color Display	8-bit	16-bit or 24-bit

Requirements for Recording from Media Devices

Whether you are broadcasting or recording RealMedia files for later use, recording from live media requires greater computer power than recording

from media files. The following table lists the minimum and recommended requirements for recording from media devices or recording a live broadcast.

Media Devices or Live Broadcasts

Requirement	Minimum	Recommended
CPU	G3 266Mhz	G4 400Mhz
Operating System	MacOS 8.6 or later	MacOS 8.6 plus QuickTime 4.0
RAM	64 MB	128 MB
Hard Disk Space	1 GB	1 GB
Color Display	16-bit	24-bit
Video Capture Card	Any QuickTime® capable capture card	
Sound Card	16-bit sound card or better	16-bit sound card or better

Other Requirements

In addition to normal hardware and software requirements, you must have the following:

- latest version of RealPlayer
- speakers or headphones connected to your sound card

For recording from a media device, any of the following connected to your computer:

- VHS, S-VHS, or Beta-SP video player
- Digital Video Disk (DVD) player
- video camera
- microphone

You must also have an FTP program installed, either Anarchie® or Fetch®, to use this product's Web Publishing features. Go to **http://www.stairways.com** for information on using Anarchie.

How to Install

Follow this procedure to install the product onto your computer.

➤ To install RealProducer Plus:

1. Download the installation file, or insert the CD-ROM into your drive.
2. Close any other applications that may be open and double-click on the installation file icon (RealProducerPlus.hqx).

   Stuffit Expander® expands the file, creating a RealProducer Plus folder.
3. Open the RealProducer Plus folder and double-click on the RealProducer Plus icon.
4. Read the terms and conditions carefully, and click **Accept** if you agree. You can click **Cancel** at any time to abort the installation.
5. Enter your e-mail address in the appropriate field.
6. Enter the serial number you received when you purchased RealProducer Plus.
7. Click **Finish** to begin working with RealProducer Plus.

STREAMING MEDIA BASICS

This chapter introduces you to streaming media. It shows you the different types of streaming media that you can create with RealProducer Plus, what you need to get started, and discusses the importance of knowing your audience.

Although you do not need to know this information in order to use RealProducer Plus for basic tasks, it is recommended that you have a working knowledge of these topics.

What is Streaming Media?

Streaming media created by RealProducer Plus can be either RealAudio or RealVideo. Before the advent of streaming media, you had to wait for a media file to download from the Internet or a network server in order to experience it. When you create streaming media, users can view it almost instantly.

Streaming media allows you to send small packets of information over a network connection. The user receives the information packets and plays your media piece by piece. The process is almost invisible to the user, except for a small amount of buffering at the beginning.

Step by Step: Streaming with RealSystem

RealProducer Plus is an integral part of the RealNetworks RealSystem. Below is a brief overview of the steps that you can take to create streaming media and put it on the Internet, or your company's Intranet.

Step 1: Start with a Media Source—File or Live Input

RealProducer Plus creates streaming media from two kinds of sources: audio and video. Whether the source is a digital file or a live feed directly to your computer, you can convert it into a RealMedia clip.

If you are creating a digital file for your source, you should save it under the following formats:

- Audio (.au, .aiff, .wav)
- QuickTime for Windows (.mov); must be QuickTime 3.0 compatible

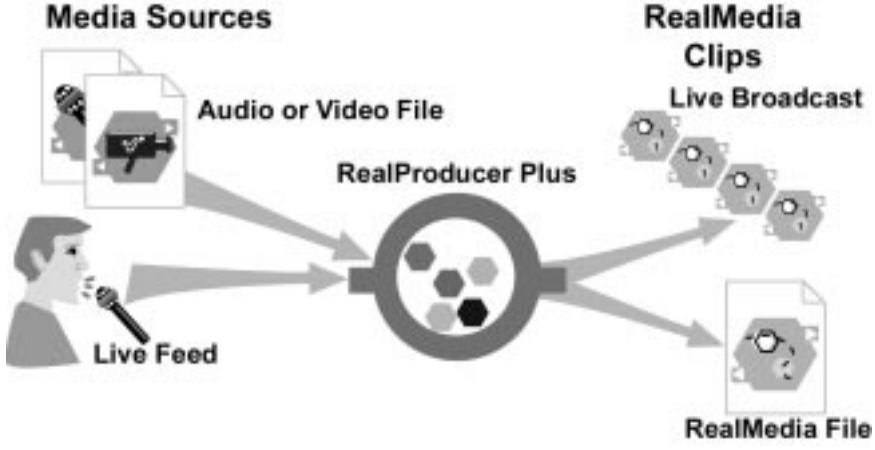
If you are sending audio and video directly to your computer, you will need:

- a media device (such as a VCR, video camera, or microphone)

Step 2: Record Your Source into a RealMedia Clip

RealProducer Plus takes your input media source and records it into a RealMedia clip. Your clip can be saved as a file to be streamed at a later time, or it can be sent directly to a server as a live broadcast. The figure below shows how RealProducer Plus converts your source into RealMedia.

Recording RealMedia Clips



RealMedia clips are also known separately as RealAudio and RealVideo. You will learn how to create these types in the next chapter, "Recording from Media Files" on page 15.

RealAudio

A RealAudio clip is created by converting an audio file or by recording from a microphone (or other audio input) onto your computer. RealProducer Plus uses various audio codecs (compression/decompression algorithms) to convert your standard audio into a format that can be streamed.

You also have various compression options based on the type of audio you are converting: voice, voice with background music, music only, or stereo music. As expected, the quality of the original audio will have the greatest effect on the ultimate quality of the compressed audio.

RealVideo

A RealVideo clip is created by converting a video file or by capturing from a video source, such as a video camera or video cassette player, to your computer. RealProducer Plus converts different attributes of the video—such as frame rate, type of motion, and size of the image—into a RealVideo clip using a video codec.

Step 3: Transfer Your Clips to a Server

If you are broadcasting your streaming media directly to a server, you can skip this step.

Once your streaming media clip is created, you will want to show it to your audience. With RealProducer Plus, you can publish (upload) the clip to your server. This server can be either a RealServer™ or a standard Web server. If you plan on using a Web server, you will not be able to take advantage of many features, such as SureStream.

See "Publishing to the Internet" on page 41 for more information on publishing your clips.

Step 4: Stream Your Clip

You will use a RealServer or a Web server to stream your clip to the Internet (or to an Intranet). The RealServer is a separate software product, created by RealNetworks, that allows you to stream live or recorded RealAudio and RealVideo files to anyone using a RealPlayer. The server can work with Web servers to stream media over the Internet or to users on a corporate Intranet.

For more information on how you can obtain and use a RealServer, go to the RealNetworks Web site at **http://www.realnetworks.com** and look for the links to this product.

Step 5: Play the Clip

Once your audience has connected successfully to your streaming media clip, they will want to experience it. A RealPlayer is all they need. Two versions of

the RealPlayer are available from RealNetworks, a free version and a Plus version. The RealNetworks Web site (**http://www.realnetworks.com**) has more information about each version and how to install and use them.

Know Your Audience

Whenever you create a RealMedia clip, you should always keep in mind the connection speed of your audience. Are they using lower-speed modems, or are they playing your clip over a high-speed network?

This section introduces you to your target audience, and shows you a way to increase your audience: SureStream.

About Target Audiences

When you select a specific target audience, you are actually specifying a maximum bandwidth for your RealMedia stream at the selected target audience. Bandwidth, measured in kilobits per second (Kbps), is the amount of data that can be sent through an Internet or network connection during a set period of time. Standard modems are commonly referred to by the bandwidth they are able to receive--for example, 28.8 and 56 Kbps.

In addition to these standard audiences, you can record clips for connection speeds of 100 Kbps, 200 Kbps, or higher. These higher bandwidths, however, are generally more typical of corporate Local Area Networks (LANs) or entertainment-based Web sites.

Keep in mind that the maximum bandwidth a connection is capable of is greater than the average bandwidth carried across it. For that reason, 28 Kbps connections actually only use approximately 20 Kbps, while a 56 Kbps connection actually uses about 34 Kbps.

Normally, these constraints can affect your recording in many ways. Sometimes you have to compromise between reaching the largest audience (with the lowest-speed connections) and the quality of your work. Fortunately, RealProducer Plus enables you to record for a number of target audiences simultaneously using SureStream.

About SureStream

With SureStream recording you can reach the widest possible audience, and provide all users with the best listening and viewing experience optimized for their bandwidth.

There are several advantages to using SureStream. You can create:

- a single RealMedia clip recorded for multiple target audiences
- a clip that will automatically switch to a lower bandwidth during poor network conditions
- a clip that is compatible with an older version of RealPlayer

SureStream RealMedia files can combine several different streams that take advantage of any or all of these features.

For example, you can record a video clip for both 28 Kbps and 56 Kbps audiences, and RealPlayer will automatically use the correct stream based on the user's connection speed. Meanwhile, a separate stream can exist for people who still own an older version of RealPlayer so that they can experience your clip. All streams are contained within a single RealMedia file.

Keep in mind that if you are broadcasting SureStream files, you must use a RealNetworks RealServer.

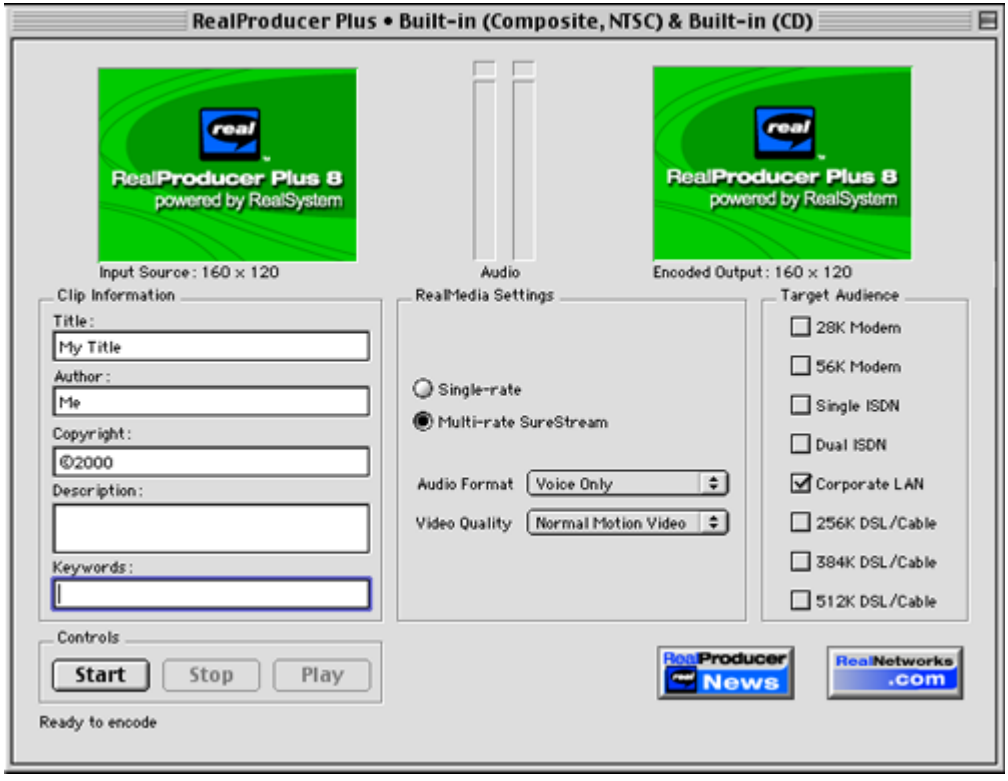
USING REALPRODUCER PLUS

This chapter describes how to use RealProducer Plus to convert standard audio and video into streaming RealMedia. The entire conversion process is known as a "recording session." You will learn how to create a recording session from a variety of input sources and how to monitor your recording session.

The RealProducer Plus Main Window

Before you begin to create RealMedia content, let's briefly tour the different components of the RealProducer Plus main window. This window is where you create, start, view, and stop a recording session.

The RealProducer Plus Main Window



The upper section of the window is where you monitor the recording process. "Viewers" show you the input video and the recorded output during a recording session. Meanwhile, an audio level indicator gives you a visual representation of the audio track.

The middle section lists all necessary information about the final RealMedia file. Details such as clip information, the target audience, audio format, video quality, and the type of stream being recorded are found here.

On the bottom are the recording controls. These controls allow you start, stop, and play the current recording session.

Recording Your Clips

RealProducer Plus includes simple assistants to guide you step-by-step through the recording process. These assistants are specifically designed to:

- convert existing audio and video files into RealMedia files
- record RealMedia files from media capture devices
- broadcast live, streaming content using a RealServer

If you are more familiar with the recording process, you can bypass the assistants and set up the recording process manually. This option is discussed later in "Recording Without the Assistants" on page 31.

Recording from Media Files

This section describes how to record a RealMedia file from different types of existing media files using the recording assistant.

Only the following audio and video formats can be converted into RealMedia clips using RealProducer Plus:

- Audio (.au, .aiff, .wav)
- QuickTime for Windows (.mov); must be QuickTime 3.0 compatible

➤ To create a RealMedia file from an existing file using the recording assistant:

1. Select **Recording Assistants** from the **File** menu.

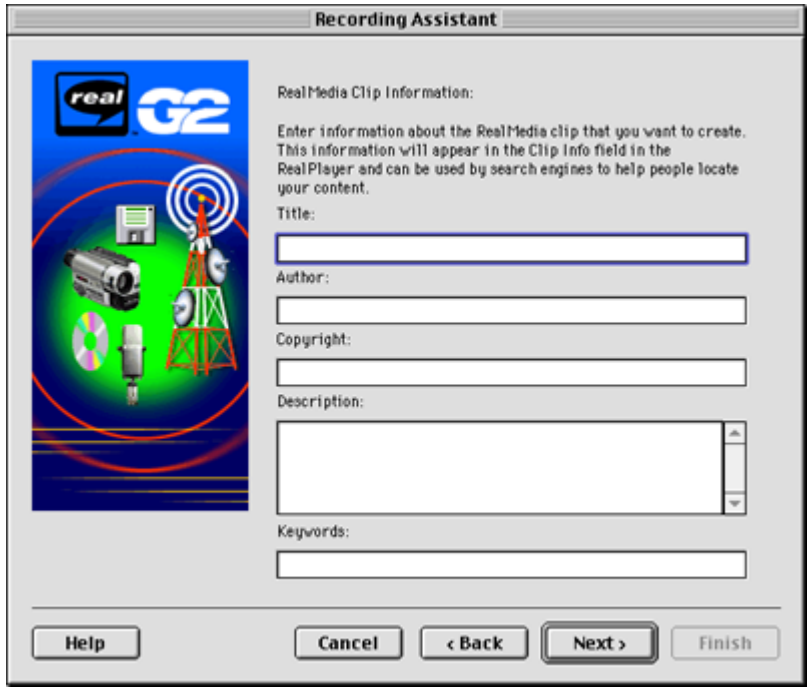
   The Recording Assistants dialog opens.

2. Select **Convert an Existing File** and click **OK**.

   The Record from File Assistant opens.

3. Use the **Browse** button to locate the audio or video file that you will use as the source for your recording.
4. Click **Next**.

The RealMedia Clip Information page opens.



5. Enter the following information in the provided spaces. This information will help your audience find your clip. You may leave them blank.

   Title—the title of the clip

   Author—the name of the clip's creator

   Copyright—year and owner of the clip's copyright

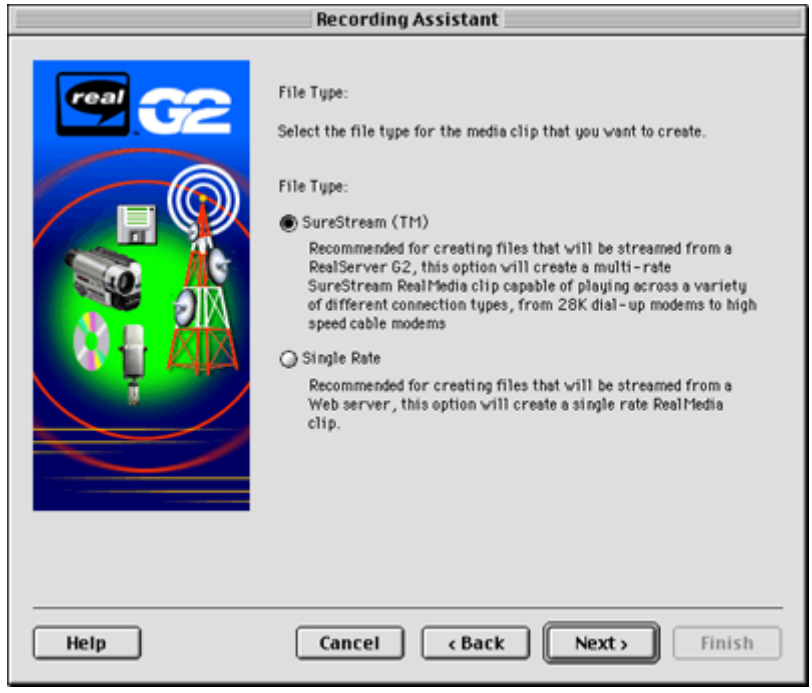
   Description—a brief summary of the clip's contents

   Keywords—words that you think your audience would use to search for your clip

   See "Creating Keywords" on page 80 for tips on creating your keywords.

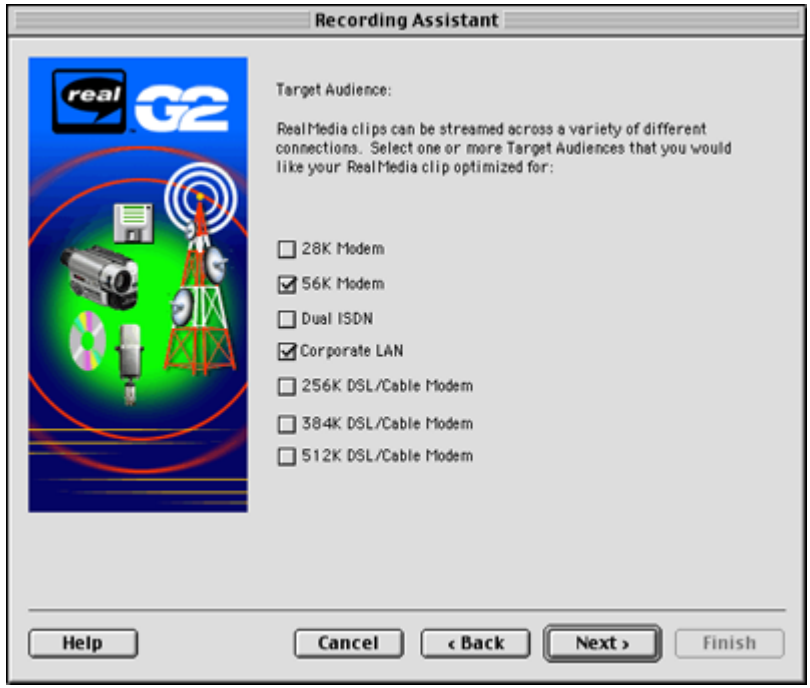
6. Click **Next**.

The File Type page opens.



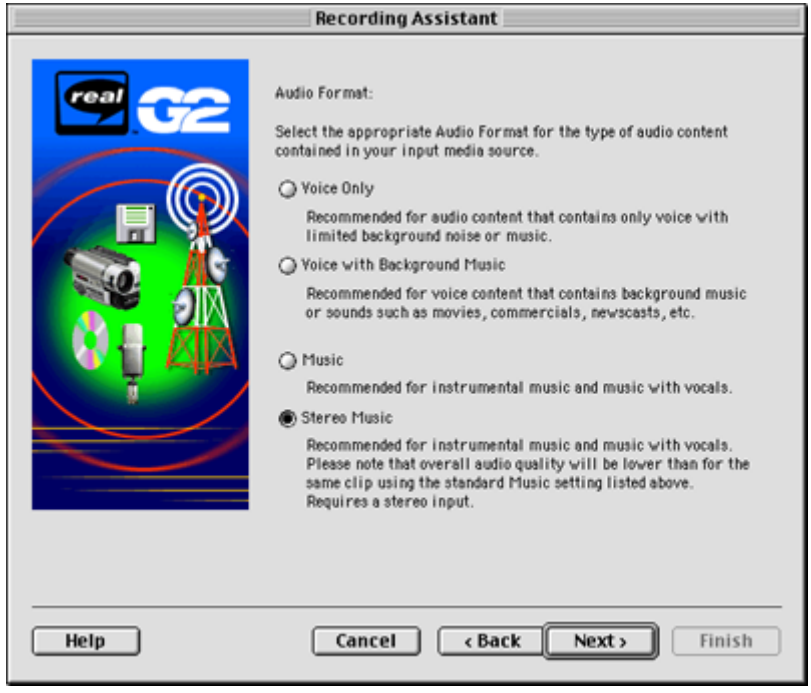
7. Select the type of RealMedia file you want to create: **SureStream** or **Single Rate**. For more information on SureStream files, see "About SureStream" on page 11.
8. Click **Next**.

The Target Audience page opens.



9. Select the connection speed for your audience. You may make more than one selection if you are creating a SureStream file.
10. Click **Next**.

The Audio Format page opens if your source file contains audio. If not, skip the next step.

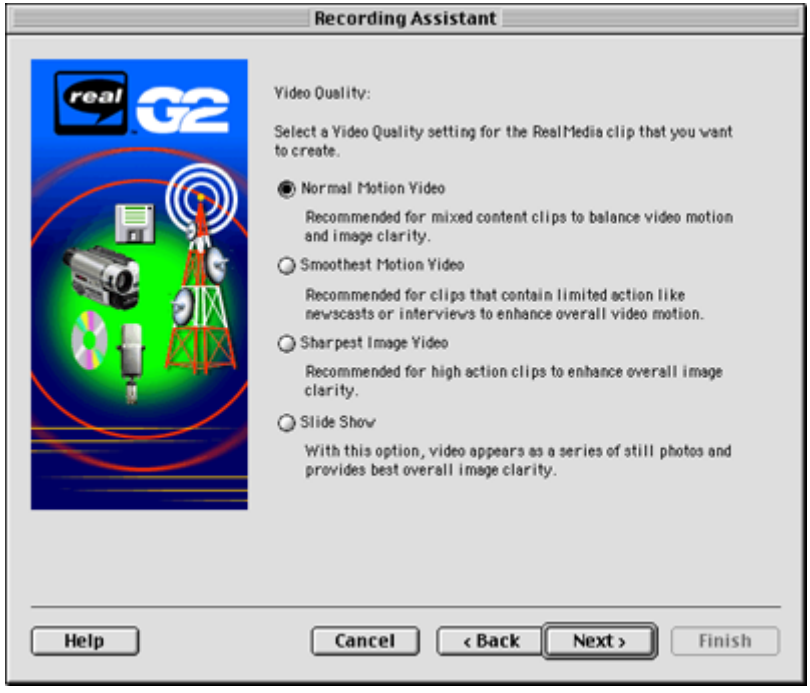


11. Select the type of audio that your file consists of (if applicable), and click **Next**.

Note

You can only select the Stereo Music format if your audio source is in stereo.

The Video Quality page opens if your source file contains video. If not, skip the next step.



12. Select the video quality for your output file (if applicable), and click **Next**.

Tip

These options are based on the content of your video. You can choose to sacrifice clarity for smoother motion, or vice versa. Choosing Normal Motion is good for most clips.

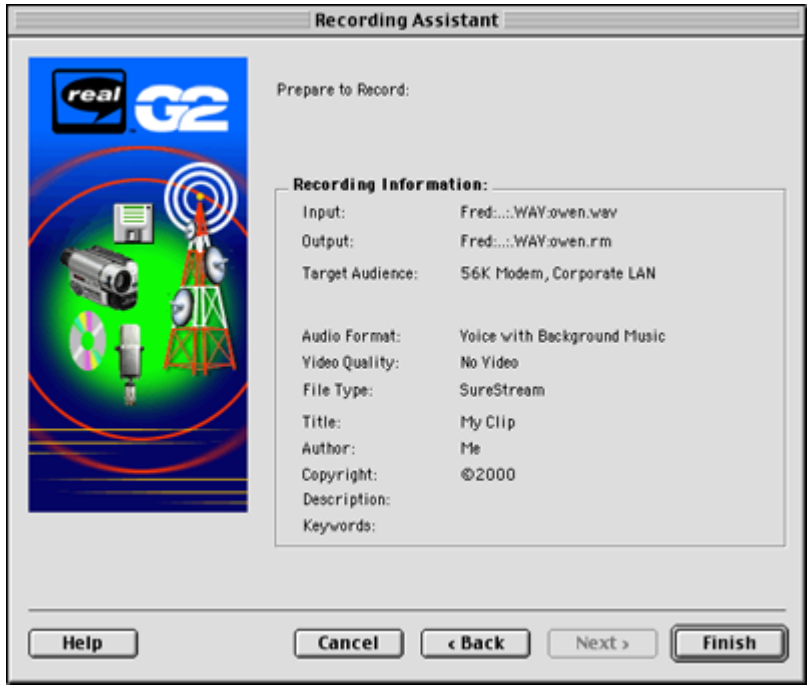
The Output File page opens.

13. Enter the name and directory of your final output file.

    The output file should have a .rm extension (for example, myfile.rm).

14. Click **Next**.

The Prepare to Record Page opens.



15. Review all information about the recording session. If it is correct, click **Finish**. You can use the **Back** button to reverse through the assistant and change any information.

    After clicking **Finish**, you are returned to the RealProducer Plus main window. Every option you selected with the assistant appears in the main window. If you are recording video input, the Input Source viewer shows the first frame.

16. You can change any recording options at this point, or simply click **Start** to begin recording.

17. Click **Stop** to quit recording before the source file ends.

    A dialog box opens asking you to confirm ending the recording, but the session continues to record.

18. Click **Yes** to close the dialog box and stop the recording.

    The Recording Complete dialog box opens. This dialog shows you final recording information about your RealMedia file.

You have the following choices:

- Click View **Statistics** to view complete information about your recording session. See "Monitoring Recording Statistics" on page 34 for more information.
- Click **Close** to return to the main window.

19. Click the **Play** button to open your RealPlayer and play the RealMedia file.

Recording from Media Devices

This section describes how to record a RealMedia file from different types of media devices using the recording wizard.

With RealProducer Plus, you can record from many types of media devices: live microphone input, live video camera input, audio tape, video tape, Digital Video Disks (DVD), or satellite feeds.

Before you begin the recording session, make sure that your media device is properly connected and is working correctly. Supported connections include:

- Universal Serial Bus (USB) ports
- ATI XCLAIM™ card
- on-board video input jacks

➤ To create a RealMedia file from a media device using the recording wizard:

1. Select **Recording Assistants** from the **File** menu.

   The Recording Assistants dialog opens.

2. Select **Capture Audio or Video to a File** and click **OK**.

The Record from Media Device page opens.

3. Select the Input Source(s) that you want to capture: audio and/or video.
4. Click **Next**.

   The RealMedia Clip Information page opens.
5. Enter the **Title**, **Author**, **Copyright**, **Description**, and **Keywords** in the provided spaces.

   This information will help your audience find your clip. You may leave these fields blank.
6. Click **Next**.

   The File Type page opens.
7. Select the type of RealMedia file you want to create: **SureStream** or **Single Rate**.
8. Click **Next**.

   The Target Audience page opens.

9. Select the connection speed for your audience. You may make more than one selection if you are creating a SureStream file.
10. Click **Next**.

    The Audio Format page opens if you selected an audio device. If not, skip the next step.
11. Select the type of audio that your content consists of (if applicable).

    Note

    You can only select the Stereo Music format if your audio source is in stereo.
12. Click **Next**.

    The Video Quality page opens if you selected a video device. If not, skip the next step.
13. Select the video quality for your output file (if applicable), and click **Next**.

    Tip

    These options are based on the content of your video. You can choose to sacrifice clarity for smoother motion, or vice versa. Choosing Normal Motion is good for most clips.

    The Output File page opens.
14. Enter the name and directory of your final output file.

    The output file must have a .rm extension (for example, myfile.rm).
15. Click **Next**.

    The Prepare to Record Page opens.
16. Review all information about the recording session. If it is correct, click **Finish**.

    After clicking **Finish**, you are returned to the RealProducer Plus main window. Every option you selected during the wizard appears in the window. If you are recording video input, the Input Source viewer shows the video source.
17. You can change any recording options at this point, or simply click **Start** to begin recording.

Note

Once you begin capturing your live input, you cannot use any other programs or click on the desktop.

18. Monitor your audio and/or video input, and click **Stop** to quit recording.

    A dialog box opens asking you to confirm ending the recording, but the session continues to record.

19. Click **Stop** to quit recording before the source file ends.

    A dialog box opens asking you to confirm ending the recording, but the session continues to record.

20. Click **Yes** to close the dialog box and stop the recording.

    The Recording Complete dialog box opens. This dialog shows you final recording information about your RealMedia file.

    You have the following choices:

    - Click View **Statistics** to view complete information about your recording session. See "Monitoring Recording Statistics" on page 34 for more information.
    - Click **Close** to return to the main window.

21. In the RealProducer Plus main window, click the **Play** button to open your RealPlayer and play the RealMedia file.

Broadcasting Live Content

This section describes how to broadcast live from different types of media devices using the recording wizard.

In addition to creating RealMedia files from your media sources, you can use RealProducer Plus to broadcast your live content directly over the Internet or a corporate LAN. You must have access to a RealServer in order to use this feature.

➤ To broadcast live content using the recording wizard:

1. Select **Recording Assistants** from the **File** menu.

   The Recording Assistants dialog opens.

2. Select **Live Broadcast** and click **OK**.

   The recording wizard opens to the Live Broadcast page.

3. Select the Input Source(s): audio or video.
4. If you select a video source, enter the **Width** and **Height** of the video.
5. Click **Next**.

   The Media Clip Information page opens.
6. Enter the **Title**, **Author**, and **Copyright**, **Description**, and **Keywords** in the provided spaces.

   This information will help your audience find your clip. You may leave these fields blank.
7. Click **Next**.

   The File Type page opens.
8. Select the type of RealMedia you want to create: **SureStream** or **Single Rate**. For more information on SureStream files, see "About SureStream" on page 11.
9. Click **Next**.

   The Target Audience page opens.
10. Select the connection speed for your audience. You may make more than one selection if you are using SureStream.
11. Click **Next**.

    The Audio Format page opens if you selected an audio device. If not, skip the next step.
12. Select the type of audio that your content consists of (if applicable).

    Note

    You can only select the Stereo Music format if your input audio is in stereo.

13. Click **Next**.

    The Video Quality page opens if you selected a video device. If not, skip the next step.
14. Select the video quality for your output file (if applicable), and click **Next**.

    Tip

    These options are based on the content of your video. You can choose to sacrifice clarity for smoother motion,

or vice versa. Choosing Normal Motion is good for most clips.

The Media Server page opens.

15. In this step, you will enter information about the RealServer that you will use to broadcast your streaming media.
    a. Enter the name and port number for the RealServer that you will use for your broadcast.
    b. Enter a **Filename** that users will use to access the broadcast. For example, broadcast.rm (the file must have a .rm extension).
    c. Enter your **Username** and **Password** for the server, if required.
    d. You may also specify a filename and location for an archive of your broadcast. Select **Archive Broadcast to File** and enter a file name, or click the **Save As** button to browse for the archive file. The file must also have a .rm extension.
16. Click **Next**.

    The Prepare to Record Page opens.
17. Review all information regarding the broadcast. If it is correct, click **Finish**.

    After clicking **Finish**, you are returned to the RealProducer Plus main window. Every option you selected during the wizard appears in the window. If you are recording video input, the Input Source viewer shows the video source.
18. You can change any recording options at this point, or simply click **Start** to begin broadcasting.
19. Monitor your audio and/or video input, and click **Stop** to finish the broadcast.

    A dialog box opens asking you to confirm ending the broadcast, but the session continues to record.
20. Click **Yes** to close the dialog box and stop the recording.

    The Recording Complete dialog opens. This dialog recaps all information regarding your broadcast.

21. Click **View Statistics** to view complete information about your recording session. See "Monitoring Recording Statistics" on page 34 for more information.
22. Click **Close** to return to the main window.

Recording Without the Assistants

Although using RealProducer Plus's recording assistants allows you to easily create RealMedia content, after time you'll likely be able to do without them. You can still create the same types of RealMedia clips:

- from a media file to a RealMedia file
- from a media device to a RealMedia file
- a live RealMedia broadcast

Converting Media Files

➤ To convert media files without using the assistant:

1. Select **Open File** from the **File** menu.

   The Open File dialog opens.
2. Navigate to the file you want to record, and select it.
3. Click the **Choose** button.

   The Open File dialog closes, returning to the RealProducer Plus main window.

   Tip

   You can also drag your media file directly into the main window to create a new session.
4. Enter the **Title**, **Author**, **Copyright**, **Description**, and **Keywords** for your output. These fields are optional.
5. Select the **File Type**, either **Single Rate** or **SureStream**. For more information on SureStream files, see "About SureStream" on page 11
6. In the **Target Audience** section, select the connection speed for your audience. You may select more than one target audience if you are recording with SureStream.

7. In the **Audio Format** section, select the type of audio contained in your source (if any).

   Note

   You can only select the Stereo Music format if your input audio is in stereo.

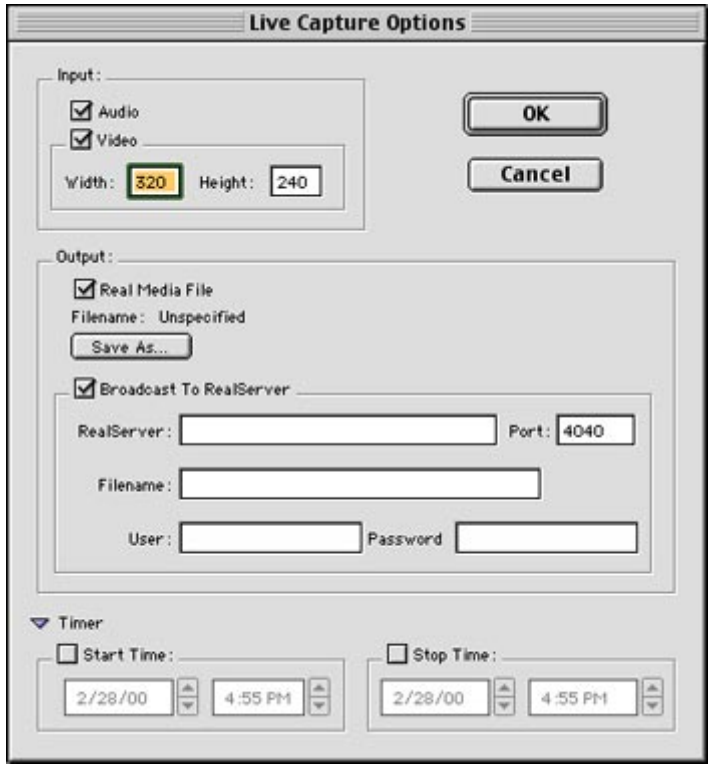
8. In the **Video Quality** section, select the type of video contained in your source (if any).
9. Click **Start** to begin the recording process.
10. Click **Stop** to end the recording.

Capturing Live Media

➤ To capture media without using the assistant:

1. Select **Record Live** from the **File** menu.

   The Live Capture Options dialog opens.



2. Select the Input Source(s): **Audio** or **Video**.
3. Enter the width and height for your video (if necessary) in pixels.
4. For recording to a file or archiving a broadcast, select **RealMedia File** in the Output section.
   a. Click **Save As**.
   b. Browse to the location for the file you want to create.
   c. Enter a name for the file, using an .rm extension.
   d. Click **Save**.
5. For a live broadcast to a RealServer, select **Broadcast to RealServer** in the Output section.
   a. Enter the name of the **RealServer** and the **Port** you will connect to.
   b. Enter a **Filename** that your audience will use to connect to your broadcast.

c. Enter a **Username** and **Password** to connect to the RealServer.

6. If you want to start the recording at a later time, in the Timer section, select **Start Time** and choose a date and time.
7. If you want to end the recording at a certain time, in the Timer section, select **Stop Time** and choose a date and time.
8. Click **OK**.

   The Capture to File dialog closes, returning to the RealProducer Plus main window.
9. Follow steps 4 through 10 in the previous procedure for converting files without using the assistants.

Monitoring Recording Statistics

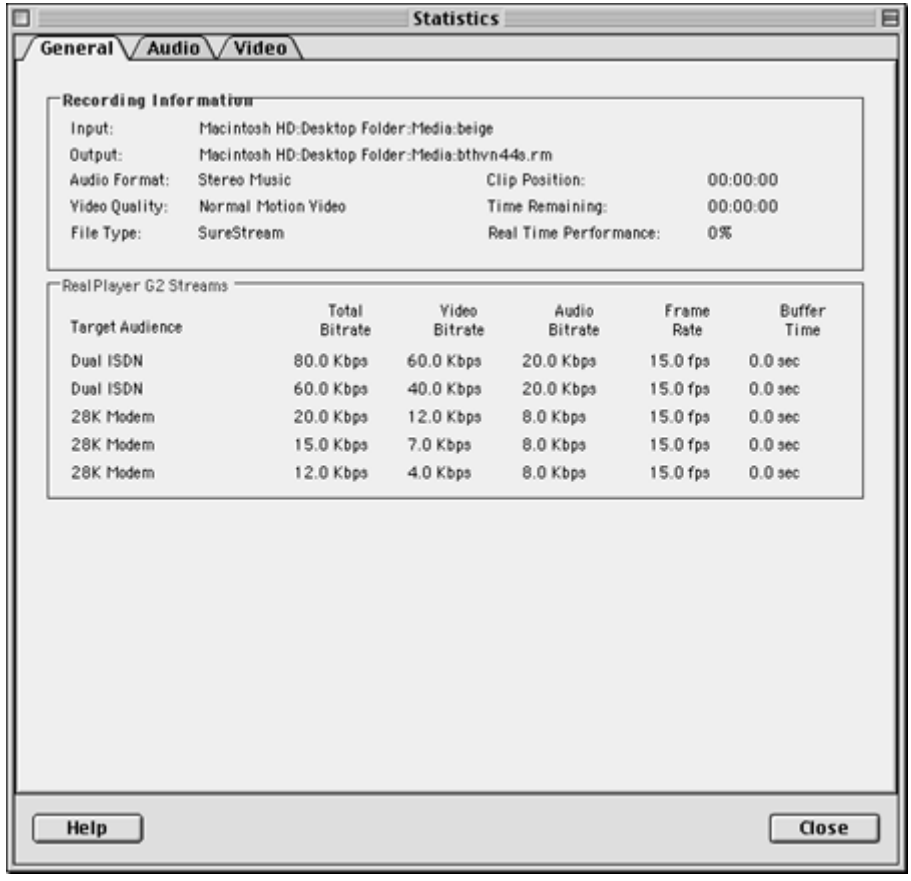
The Statistics window is a useful tool that allows you to monitor the performance of your recording session.

You can watch general statistics, audio-only statistics, or video-only statistics. If you are using SureStream, statistics are shown for each stream that RealProducer Plus creates.

➤ To monitor recording statistics:

1. After you have created a recording session, choose **Statistics** from the **View** menu.

The Statistics window opens. You can return to the RealProducer Plus window without closing the Statistics window.



2. Start recording, noting the top section of the Statistics window. Here is where you will find basic information about your recording session such as:
   - name and location of the input file
   - audio format and video quality
   - whether the output is SureStream or Single Rate

You also find information that constantly changes, such as:

- time remaining in the clip
- real time performance

3. Also monitor the general, audio, and video information located at the bottom of the Statistics window. These statistics are described later in this section.

Monitoring Real Time Performance

A main feature of the statistics dialog is its ability to show the performance of your recording session.

This statistic compares the time it took to record your clip to the time it takes to play the input. For example, if your input is a 10 second video clip and it takes RealProducer Plus 5 seconds to process the clip, the Real Time Performance would be 50%.

When capturing video or audio to a file, any value near or above 100% means that your computer may not be able to process data as fast as it is received. The session may fail due to lack of computing resources.

General Statistics

These statistics give you information about each target audience selected during the creation of the recording session. If you are recording a Single Rate clip, only one stream appears. If you are using SureStream, all streams are listed for each target audience.

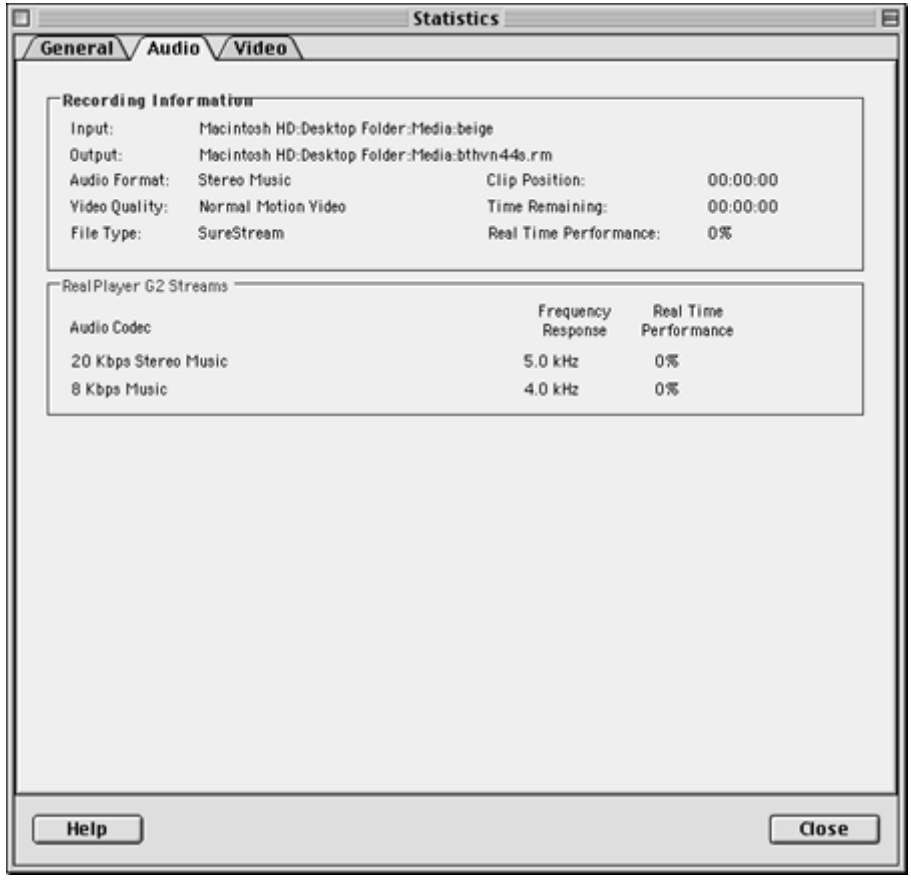
See the table below for more details about these statistics.

Using General Statistics

Statistic	Description
Target Audience	target bit rate of your audience
Total Bit Rate	total bit rate of the clip
Video Bit Rate	bit rate of the video stream
Audio Bit Rate	bit rate of the audio stream
Frame Rate	frames per second of video
Buffer Time	number of seconds needed before the clip can be played

Audio Statistics

These statistics give you information about the audio codecs (compression/decompression algorithms) used to create the audio streams. More than one codec appears if you are using SureStream.



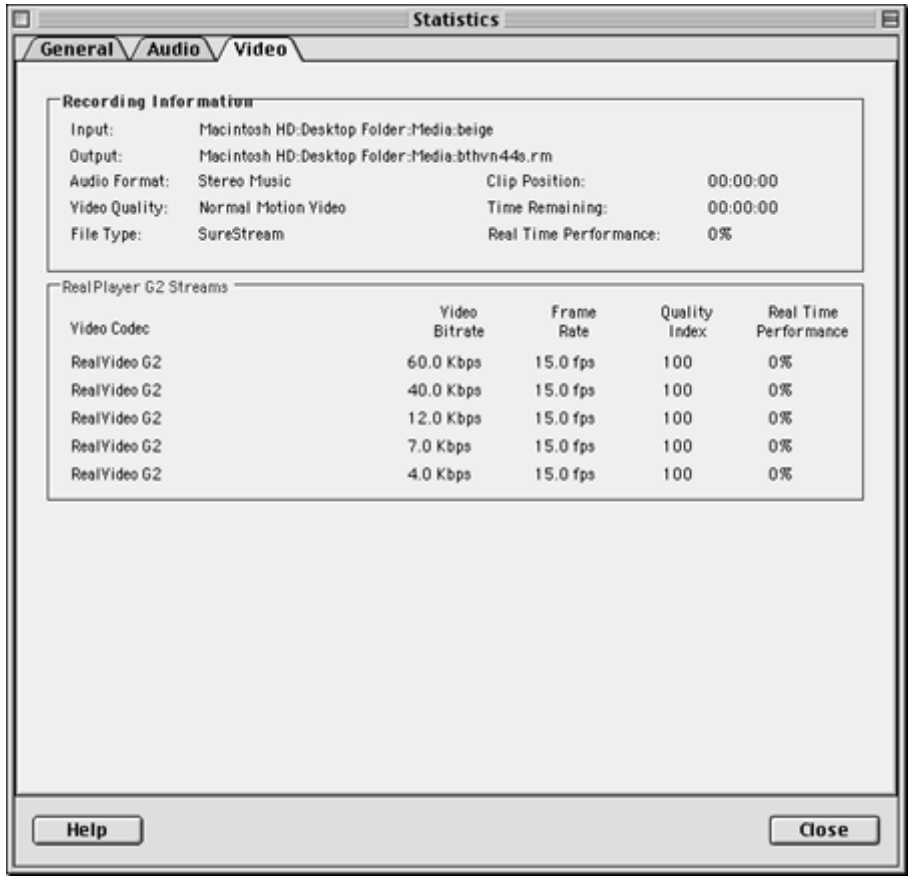
See the table below for more details about these statistics.

Using Audio Statistics

Statistic	Description
Audio Codec	codec being used to convert audio stream
Frequency Response	highest frequency found in the recorded audio
Real Time Performance	approximate percentage of your computer's audio recording speed compared to real time audio playing speed

Video Statistics

These statistics give you information about the video codecs (compression/decompression algorithms) used to create the video streams. More than one codec appears if you are using SureStream.



See the table below for more details about these statistics.

Using Video Statistics

Statistic	Description
Video Codec	codec used to convert video
Video Bit Rate	bit rate of the video
Frame Rate	frames per second of video

(Table Page 1 of 2)

Using Video Statistics (continued)

Statistic	Description
Quality Index	video quality affected by your computer processor's recording speed; 100 is best, and values less than 80 reflect reduced quality
Real Time Performance	approximate percentage of your computer's video recording speed compared to real time video playing speed

(Table Page 2 of 2)

PUBLISHING TO THE INTERNET

Along with its powerful recording features, RealProducer Plus includes assistants that allow you to publish your streaming content to the Internet or and Intranet. Using these assistants, you can create a RealMedia-enhanced Web page and upload it to a server.

Creating Web Pages

A primary publishing feature of RealProducer Plus is the Web Page Assistant. With this assistant, you can instantly create a Web page enhanced with RealMedia. The assistant creates all of the HTML necessary to provide a page that contains your streaming media file.

Guided through a series of prompts, you choose how to stream your RealMedia file: either with a RealPlayer in a separate window, or with a RealPlayer embedded within the page. The assistant then allows you to preview the finished page with your Web browser and a RealPlayer.

Follow these steps to create either type of RealMedia Web page, pop-up or embedded.

➤ To create a Web page that opens a separate RealPlayer:

1. Select **Create Web Page** from the **Tools** menu.

   The Web Page Assistant opens to the Introduction page.

2. Click **Next** to begin the assistant.

   The Media File page opens.

3. Select a RealMedia file.

   The name of the last RealMedia file created by RealProducer Plus appears by default. Click the **Browse** button to locate another file.

4. Click **Next**.

   The Playback Method page appears.

5. Choose **Pop-up Player** and click **Next**.

   The Web Page Caption page opens.

6. Enter text that will appear in the Web page that links to your clip.

7. Click **Next**.

   The Web Page Filename page opens.

8. Enter the name and directory of the Web page you want to create.

9. Click **Next**.

   The Web Page Results page opens. This page informs you that a Web page and a RealMedia metafile have been created.

10. If you wish to preview your Web page with an Internet browser, click **Preview** on the Results page.

    You must have RealPlayer installed to view your page properly.

11. Click **Finish** to close the assistant.

➤ To create a Web page with an embedded RealPlayer:

1. Select **Create Web Page** from the **Tools** menu.

   The Web Page Assistant opens to the Introduction page.

2. Click **Next** to begin the assistant.

   The Media File page opens.

3. Select a RealMedia file.

   The name of the last RealMedia file created by RealProducer Plus appears by default. Click the **Browse** button to locate another file.

4. Click **Next**.

   The Playback Method page appears.

5. Choose **Embedded Player** and click **Next**.

   The Player Control Layout page appears. In this page, you can decide what components of the RealPlayer to include within the Web page.

6. Select a control layout from the available options.

7. Select **Auto Start** if you want the RealMedia file to play automatically when your Web page is opened.

8. Click **Next**.

The Web Page Caption page appears.

9. Enter a caption name that will appear as a title for the RealMedia file.
10. Select whether you want the caption to appear above or below the Player controls.
11. Click **Next**.

    The Web Page Filename page appears.
12. Enter the name and directory of the Web page you want to create
13. Click **Next**.

    The Web Page Results page opens. This page informs you that a Web page and a RealMedia metafile have been created.
14. If you wish to preview your Web page with an Internet browser, click **Preview** on the Results page.

    You must have RealPlayer installed to view your page properly.
15. Click **Finish** to close the assistant.

Keep in mind that the Web pages you create with the Web Page Assistant will initially point to files located on your local hard drive. If you upload your pages to a Web server, these local file references will be automatically updated. Therefore, you should avoid making manual changes to any file references in HTML files created by the assistant.

Alterations to these files or any file references contained in the associated .ram/.rpm metafile may cause errors when publishing Web pages to a remote server.

About Metafiles

A metafile points a Web page link to one or more RealMedia clips located on a remote server. The function of a metafile is to point to the location where your media file actually resides and is required for your file to stream, rather than simply download and play. Typically, a metafile is located on a server and contains the URL where a RealMedia clip can be found.

Metafiles created by the RealProducer Plus Web Page Assistant reside on your local hard drive and point to files on your local file system. When you publish your files to a server, these metafiles are automatically updated to include information about the server where your media files will be sent.

Publishing Your Files to a Server

Another assistant included with RealProducer Plus is the Publish to Server Assistant. This assistant allows you to publish your RealMedia-enhanced Web page to a remote server. The server can be either a RealNetworks RealServer or a standard HTTP Web server.

The assistant leads you through a series of prompts to help you specify the type of server and the directory where you will upload your page. You can also specify the name of the Web server and the URL directory where your Web page will be located. The assistant then allows you to preview the finished page.

When you upload your Web pages to a remote server, RealProducer Plus automatically updates your Web page and .ram/.rpm metafile to point to the appropriate server addresses, directories and files.

To avoid confusion during the publishing process, you should make sure you have a valid account. Contact your Internet Service Provider (ISP) for the following information before you begin.

Note

You must have an FTP program installed, either Anarchie or Fetch, to successfully publish your files.

Worksheet 1: RealServer Information

If you are using a RealServer to stream your files, you will also need to obtain the following information from your system administrator or ISP. Please note that for streaming from a RealServer your Web page will be copied to a standard HTTP Web server, while your RealMedia file may be copied to a separate RealServer.

File Server: Name or IP address of the file server where your Web page will be uploaded. For example, ftp.server.com.

_____

Directory: Name of the directory on the file server where your Web page will be uploaded. For example, if the personal directory assigned to you by your system administrator is *public_html*, enter public_html as the directory name. This may be left blank.

_____

RealServer: Name or IP address of the RealServer where you will upload your RealMedia file. For example, ftp.server.com.

_____

Media Directory: Name of the media directory on the RealServer where your RealMedia file will be uploaded. For example, if the media directory assigned to you by your system administrator is *upload*, you would enter upload as the directory name.

_____

RealServer Location: Name or IP address of the RealServer that users will use to locate your media file. This can include the port. For example, if the full URL users will use to locate your media file on the Internet is *rtsp://real.server.com:6060/~username/file.rm* you would enter real.server.com:6060 as the RealServer name and port.

_____

URL Directory: The directory on the RealServer that users will use to locate your media file. For example if the full URL that users will use to locate your media file is *rtsp://real.server.com:6060/~username/file.rm* you would enter ~username as the URL Directory.

_____

Worksheet 2: HTTP Server Information

If you are using a standard HTTP Web server to stream RealMedia, you should obtain the following information from your system administrator or ISP. For simple HTTP streaming, your Web page and media file will be copied to the same location.

File Server: Name or IP address of the file server where your Web page will be uploaded. For example, ftp.server.com.

_____

Directory: Name of the directory on the file server where your Web page will be uploaded. For example, if the personal directory assigned to you by your system administrator is *public_html*, enter public_html as the directory name. This may be left blank.

_____

Web Server: Name or IP address of the Web server users will use to locate your Web page. For example, if the full URL users will use is *http://www.server.com/~username/file.htm*, enter www.server.com as the Web server name.

_____

URL Directory: The directory on the Web server that users will use to locate your Web page. For example, if the full URL is *http://www.server.com/~username/file.htm*, enter ~username as the URL Directory.

_____

Publishing to a RealServer

The following instructions are for publishing your RealMedia clip to a RealNetworks RealServer. Using a RealServer allows you to publish Web pages that have RealMedia without losing functionality (such as SureStream).

Before you begin the procedure, make sure you have all of the information described in "Worksheet 1: RealServer Information" on page 45.

➤ To publish a file to stream directly from a RealNetworks RealServer:

1. Click the **Publish Web Page** button.

   The Publishing Assistant opens.

2. Click **Next** to begin.

   The Web Page Filename page opens.

3. Locate the name of the file you wish to publish and click **Next.**

   The Publishing Profile page opens.

4. Choose an Internet Service Provider from the list or select **Generic - No Defaults** if your Service Provider is not listed, and click **Next**.

   The Streaming Method page opens.

5. Click **Stream media clip from a RealServer** and click **Next**.

   The FTP Server Information page opens.

6. Type in the name or IP address of the file server where you are uploading your files and the directory on the file server where your page will be sent. Then type in your user name and password, and click **Next**.

   The Web Page URL page opens.

7. Type in the name or IP address of the Web server and URL Directory that users will use to locate your page on the Internet, and click **Next**.

   The RealServer Information page opens.

8. Enter the name or IP address of the RealServer where your media file will be sent. Enter the directory where your media file will be sent, plus your user name and password, and click **Next**.

   The Media Clip URL page opens.

9. Type in the name or IP address of the RealServer where your media clip will be referenced from.

10. Select either **Use Default Ports** or **Use Custom Ports**. If you are unsure, then use the defaults.
11. Type in the directory of the RealServer where your clip will be referenced from.

    The full URL of the clip that you are publishing appears below.
12. Check to see that the URL is correct, and click **Next**.

    The Upload Files page opens.
13. Click **Next** to begin uploading your files.

    Your files automatically upload to your Web server. If any errors occur while uploading your files, you will receive and error message describing the problem and potential solutions.
14. Click **View Now!** to view your published Web page.
15. Click **Finish** when you are done viewing your published Web page.

Publishing to a Standard Web Server

The following instructions are for publishing your RealMedia clip to a standard HTTP Web server. While these servers may be more common, they don't allow you to fully use all RealMedia features.

Before you begin the procedure, make sure you have all of the information described in "Worksheet 2: HTTP Server Information" on page 46.

➤ To publish a file to stream directly from a standard HTTP Web server:

1. Click the **Publish Web Page** button.

   The Publishing Assistant opens.
2. Click **Next** to begin.
3. Enter the name of the file you wish to publish and click **Next.**

   The Publishing Profile page opens.
4. Choose an Internet Service Provider from the list or select **Generic - No Defaults** if your Service Provider is not listed, and click **Next**.

   The Streaming Method page opens.
5. Click **Stream media clip from a standardWeb server** and click **Next**.

   The FTP Server Information page opens.

6. Type in the name or IP address of the file server where you are uploading your files and the directory on the file server where your page will be sent. Then type in your user name and password, and click **Next**.

   The Web Page URL page opens.

7. Type in the name or IP address of the Web server and URL Directory that users will use to locate your page on the Internet.

8. Click **Next**.

   The Upload Progress page appears.

9. Click **Next** to begin uploading your files.

   Your files automatically upload to your Web server. If any errors occur while uploading your files, you will receive and error message describing the problem and potential solutions.

10. Click **View Now!** to view your published Web page.

11. Click **Finish** when you are done viewing your published Web page.

CUSTOMIZING RECORDING OPTIONS

RealProducer Plus comes with a variety of options that allow you to create RealMedia suited to your needs. This chapter discusses how to change different recording preferences, how to adjust the settings for target audiences, and how to change audio and video capture settings.

Changing RealProducer Plus Preferences

RealProducer Plus gives you the option to modify settings that affect all recording sessions. This section shows you how to change general recording preferences, SureStream preferences, and live broadcast settings. You use the Preferences dialog box to make these adjustments.

General Preferences

The General page of the Preferences dialog box allows you to change properties about files you create, start-up options, and the temporary storage directory used by RealProducer Plus.

The Preferences Dialog Box - General Page

File Properties

By changing file properties, you are allowing RealPlayer Plus users to be able to record your RealMedia clip during playback, download your RealMedia clip to their hard drive, disallow search engines to find your clip, and add rating information to your clip. These settings are used for each clip you create.

Selecting the **Allow Recording** preference allows RealPlayer Plus users the option of recording the playback of your RealMedia clip onto their computers. When your clip is played, the user clicks the Record button and your clip is saved on the user's machine. Deselecting this preference disables the Record button for RealPlayer Plus users.

Selecting the **Allow Download** preference gives any user--even those without a RealPlayer--the ability to download your RealMedia clip directly onto their hard drive.

Selecting the **Files Should Not Be Indexed By Search Engines** preference disables the ability for search engines to point users to your clip. When deselected, search engines will use keywords that you add to the clip. See "Creating Keywords" on page 80 for more information.

You can also choose to give your clip a rating for its content. The following list describes the different Audience Ratings:

- **General - All Ages**--suitable for viewing by all audiences; the default setting
- **Parental Guidence Recommended**--might not be suitable for children 13 or under
- **Adult Supervision Required**--not suitable for children under 18
- **Adults Only**--should not be watched by anyone under 18

Temporary Storage Directory

During a recording session, RealProducer Plus uses a directory to store media files prior to creating the final RealMedia clip. Using the Preferences dialog box, you can change the directory used for this purpose.

➤ To change the temporary storage directory used by RealProducer Plus:

1. From the RealProducer Plus main window, choose **Preferences** from the **Options** menu.

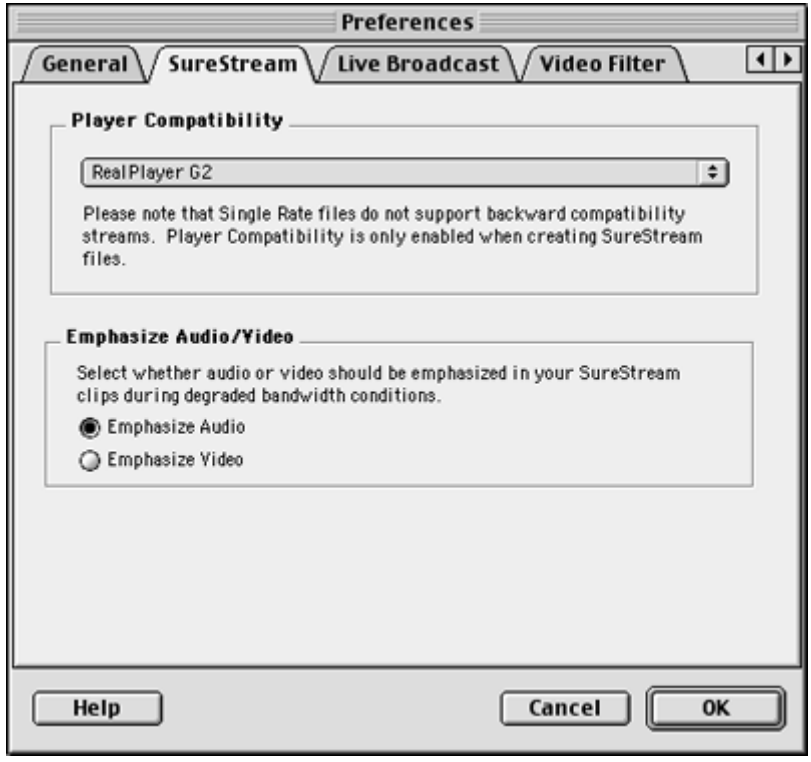
   The Preferences dialog opens.

2. Click the **General** tab.
3. Click the **Browse** button, select the new temporary storage directory, and click **OK**.
4. Click **OK** to close this dialog.

SureStream Preferences

The SureStream page of the Preferences dialog box allows you to change different options when you record SureStream clips. You can create a separate stream for older versions of the Player, and you can decide whether audio or video quality should be given priority during reduced bandwidth conditions.

The Preferences Dialog Box - SureStream page



Player Compatibility

RealProducer Plus allows you to record RealMedia clips that can be played on both RealPlayer versions G2 and 5.0. During the recording process, RealProducer Plus creates both a G2 stream and a separate 5.0 stream. However, you will still need a RealServer G2 to stream the clip.

We recommend that you create G2-only clips to limit file size and processing time, unless you are sure you need 5.0 compatibility.

➤ To change RealPlayer compatibility:

1. From the main RealProducer Plus window, choose **Preferences** from the **Options** menu.
2. Click the **SureStream** tab.
3. Select the version of RealPlayer you want your RealMedia files to be compatible with from the **Player Compatibility** drop-down list.

4. Click **OK** to close this dialog.

Emphasize Audio or Video

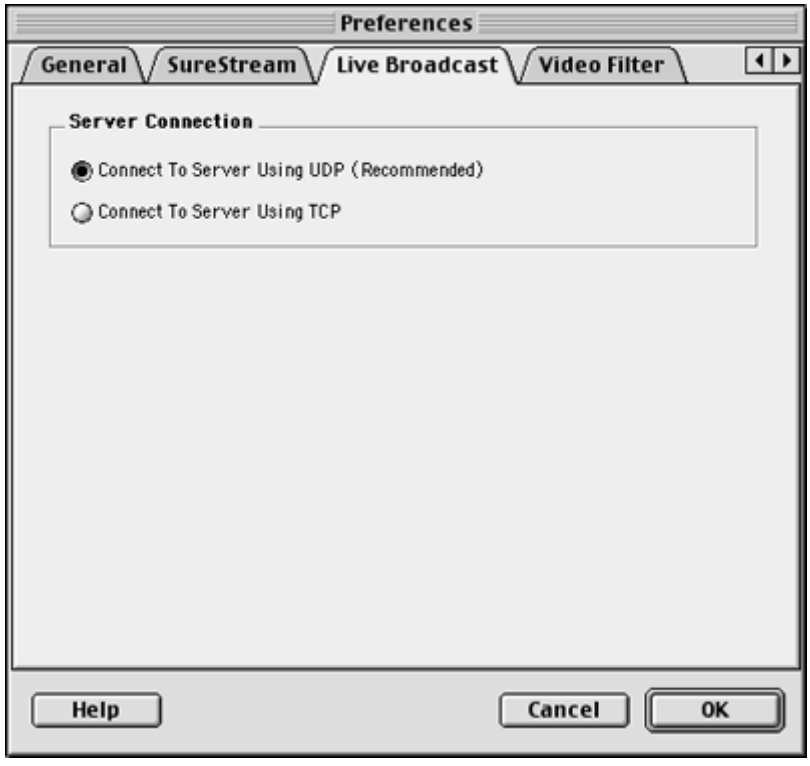
This option allows you to choose whether your clip will emphasize audio or video when a RealPlayer's connection degrades and must switch to a lower bandwidth stream. Choosing audio means that video quality will be sacrificed before audio quality. Choosing video means that audio quality will be sacrificed before video quality.

➤ To change SureStream emphasis:

1. From the main RealProducer Plus window, choose **Preferences** from the **Options** menu.
2. Click the **SureStream** tab.
3. Select whether to emphasize audio or video during duress conditions.
4. Click **OK** to close this dialog.

Live Broadcast Settings

These settings are used for any live broadcast you create with RealProducer Plus. They control the protocol that you will use to connect to your server during the broadcast.



You have two choices for connecting to a server:

- **Connect to Server Using UDP**—uses the UDP protocol for all broadcasts; this setting is the default and is recommended
- **Connect to Server Using TCP**—uses the TCP protocol for all broadcasts; this setting is best for broadcasting through a firewall and requires a RealServer G2 6.1 or above

Changing Video Encoding Preferences

You can adjust how video data is converted into RealVideo. Using a number of controls, advanced users can fine-tune how video data is filtered, compressed, and encoded into streaming video.

Adjusting Video Filters

When RealProducer Plus receives video input from a video capture card or from a video file, it first passes the data through different video filters. These filters can remove video "noise," remove unnecessary video frames, and remove video "artifacts" created when the original video was converted into digital video.

Using the filters will generally result in higher quality output clips.

Using the Noise Filter

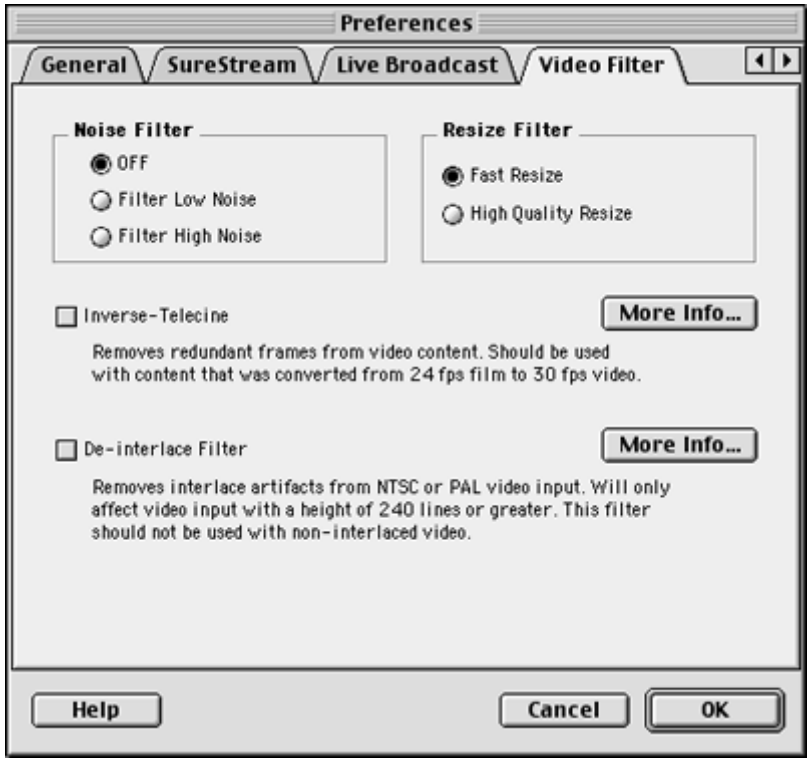
Video noise appears as distortions (blotches) in your input video. This noise can appear in video for a variety of reasons: poor capture cards, cameras, or storage. The noise filter removes this noise from the input video prior to recording.

➤ To adjust the video noise filter:

1. From the RealProducer Plus main window, choose **Preferences** from the **Options** menu.

   The Preferences dialog opens.

2. Click the **Video Filter** tab.



3. Choose the type of noise filtering you want to use in the Noise Filter area.
   - **Off**—disables the noise filter; your input video is untouched
   - **Filter Low Noise**—reduces mild noise levels from live capture sources; use unless the input is very high quality or has been pre-processed
   - **Filter High Noise**—fixes badly distorted video; may eliminate some details
4. Click **OK** to return to the main window.

Using the Resize Filter

When you resize input video, you can introduce blurring or aliasing into the video data. The resize filter can remove these problems and create a smoother picture.

Tip

Use the High Quality Resize filter when high bit rate video is resized.

➤ To adjust the resize filter:

1. From the RealProducer Plus main window, choose **Preferences** from the **Options** menu.

   The Preferences dialog opens.

2. Click the **Video Filter** tab.

3. Choose the type of resize filter you want to use in the Resize Filter area:

   - **Fast Resize**—the filter is mostly disabled so that you can encode your output faster
   - **High Quality Resize**—fully enables the filter, giving you the best video quality for resized video

4. Click **OK** to return to the main window.

Using the Inverse-Telecine Filter

Movie film is photographed generally at 24 frames per second (fps). When a film is converted into digital video at 30 fps, extra frames are added by merging frames together or copying entire frames. The film-to-video conversion process is called telecine.

The inverse-telecine filter looks for frames added during a telecine process and removes them, thus eliminating redundant encoding and improving the quality of the frames that are encoded.

➤ To turn on the inverse-telecine filter:

1. From the RealProducer Plus main window, choose **Preferences** from the **Options** menu.

   The Preferences dialog opens.

2. Click the **Video Filter** tab.

3. Select the **Inverse-Telecine** option to enable this filter.

4. Click **OK** to return to the main window.

Using the De-Interlace Filter

This filter removes "artifacts" that can be introduced when encoding NTSC or PAL formatted video. These artifacts are usually a jaggedness surrounding a moving object.

➤ To turn on the de-interlace filter:

1. From the RealProducer Plus main window, choose **Preferences** from the **Options** menu.

   The Preferences dialog opens.

2. Click the **Video Filter** tab.
3. Select the **De-Interlace Filter** option to enable this filter.
4. Click **OK** to return to the main window.

Adjusting the Video Codec

These settings adjust how the video data is encoded by the RealProducer Plus video codec. You can choose what video codec to use, set the codec to analyze the video prior to encoding, increase quality by varying the bit rate, and protect against packet loss.

Choosing a RealVideo Codec

RealProducer Plus allows you to choose what version of RealVideo you will use to create your streaming media clips. Each version uses different methods to compress your original video data into a format that is best for streaming. The following table gives you a brief description of each version.

RealVideo Codec Versions

Codec Name	Description
RealVideo G2	A basic RealVideo codec that works with all RealPlayer versions from G2 and higher.

(Table Page 1 of 2)

RealVideo Codec Versions (continued)

Codec Name	Description
RealVideo G2 with SVT	A RealVideo codec with Scalable Video Technology (SVT); compatible with RealPlayer versions 6.0.6 and above. For more information about SVT, see "About RealVideo with SVT" below.
RealVideo 8.0	This RealVideo codec provides the best quality output for all bit rates, but uses more processing power than the other codecs. It is compatible with RealPlayer 8 and above. Your audience's RealPlayers must update before they can view clips created with this codec.

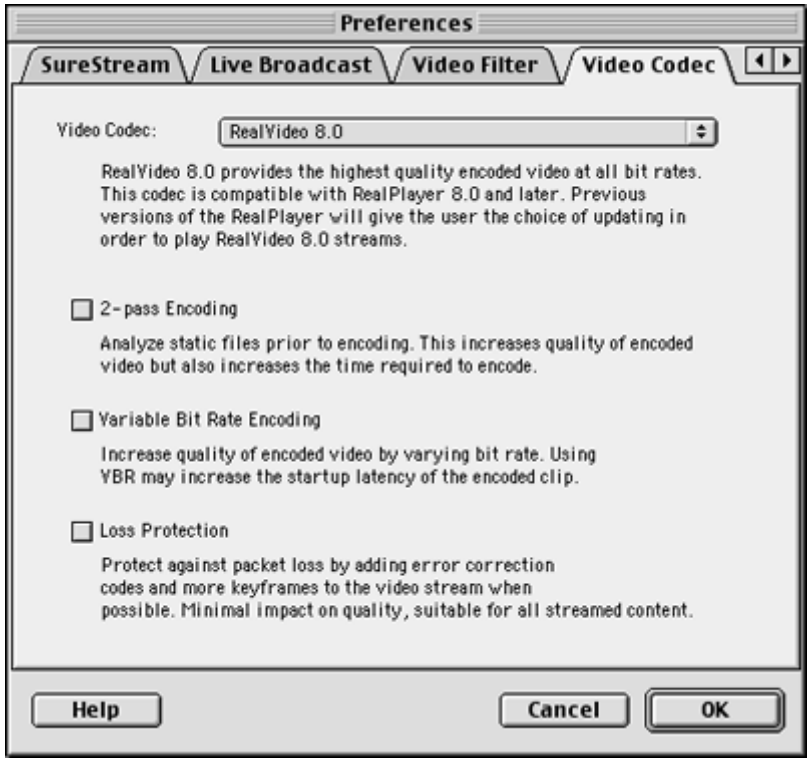
(Table Page 2 of 2)

➤ To choose a video codec:

1. From the RealProducer Plus main window, choose **Preferences** from the **Options** menu.

   The Preferences dialog opens.

2. Click the **Video Codec** tab.



3. Select a **Video Codec** from the list.
4. Click **OK** to return to the main window.

About RealVideo with SVT

When you select RealVideo with SVT, RealProducer Plus creates RealVideo clips that can automatically adjust the following according to the audience's connection and computer processing speed:

Frame Rate—you can create video clips and not worry about the audience's computer speed. If the clip is unable to keep the frame rate on a user's machine, it will gradually reduce the frame rate needed to maintain clear video.

Frame Size—create clips for vastly different bit rates without worrying about the size of the image. RealVideo with SVT creates the optimal frame size for each stream, based on bit rate and other video settings.

Data Loss—if packets are lost during video delivery, special packet that correct errors are sent to reconstruct the lost data.

Using Two-Pass Encoding

Two-pass encoding increases quality of output video by analyzing video data before encoding the input video. The first pass analyzes the entire clip, looking for transitions and overall complexity. The second pass encodes the clip using the analysis from the first pass. Using this feature will increase encoding time.

When you use two-pass encoding, no video appears in the video preview window during the first pass.

➤ To use two-pass encoding:

1. From the RealProducer Plus main window, choose **Preferences** from the **Options** menu.

   The Preferences dialog opens.

2. Click the **Video Codec** tab.

3. Select the **2-Pass Encoding** option.

4. Click **OK** to return to the main window.

Using Variable Bit Rate (VBR) Encoding

This feature enables the video codec to vary the bit rate throughout the clip depending on the type of content being encoded. More bits are spent on high-action scenes, taking away bits from low-action scenes.

➤ To use VBR encoding:

1. From the RealProducer Plus main window, choose **Preferences** from the **Options** menu.

   The Preferences dialog opens.

2. Click the **Video Codec** tab.

3. Select the **Variable Bit Rate Encoding** option.

4. Click **OK** to return to the main window.

Using Loss Protection During Encoding

When you select this feature, you make the output video more resilient to "lossy" environments. A lossy environment is when packets of streaming video

data are lost during transition from the server to the player. Bad phone lines or heavy network traffic can both create a lossy environment.

➤ To use loss protection:

1. From the RealProducer Plus main window, choose **Preferences** from the **Options** menu.

   The Preferences dialog opens.

2. Click the **Video Codec** tab.

3. Select the **Loss Protection** option.

4. Click **OK** to return to the main window.

Advanced Encoding Features

These features allow you to fine-tune the encoded output video, but should only be used by an expert. Adjusting these settings incorrectly can seriously degrade your output video.

Setting Maximum VBR Startup Latency

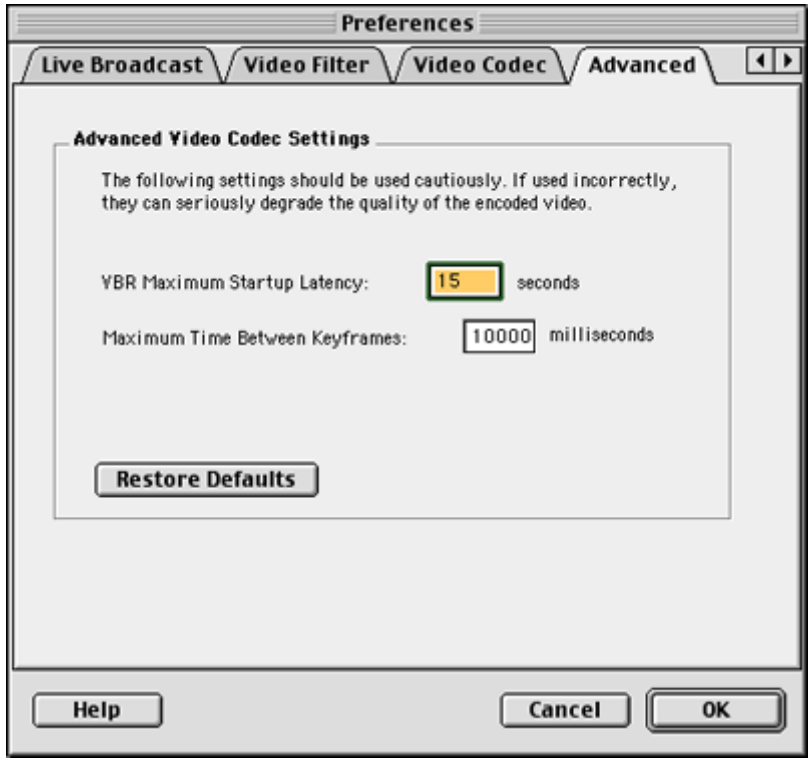
If you selected to use VBR encoding in the Video Codec tab, you can also specify the maximum time that latency will occur before the clip begins.

➤ To specify max VBR latency time:

1. From the RealProducer Plus main window, choose **Preferences** from the **Options** menu.

   The Preferences dialog opens.

2. Click the **Advanced** tab.



3. Enter the time in seconds for VBR latency.
4. Click **OK** to return to the main window.

Setting Maximum Time Between Keyframes

Keyframes are used to reset a video image during encoding. All other frames are created for minor adjustments between the keyframes. This setting allows you to specify how frequently the video is reset.

Note that more frequent keyframes may increase the bit rate needed to stream the output clip. Otherwise, the quality of the video is decreased.

➤ To specify max time between keyframes:

1. From the RealProducer Plus main window, choose **Preferences** from the **Options** menu.

   The Preferences dialog opens.

2. Click the **Advanced** tab.

3. Enter the time in milliseconds that will occur between keyframes. Setting to 0 will make every frame a keyframe.
4. Click **OK** to return to the main window.

Customizing Target Audience Settings

RealProducer Plus gives you the option to adjust the settings for a particular target audience. Each target audience setting is an array of various codecs (compression/decompression algorithms) and other settings that work best for that particular target bit rate.

The quality of the recorded output is affected by these settings and by the actual content (for example, fixed camera shots, amount of motion, and multiple camera shots).

There are two types of target audience settings: settings for video clips, and settings for audio-only clips. The following sections describe how to modify each type of setting.

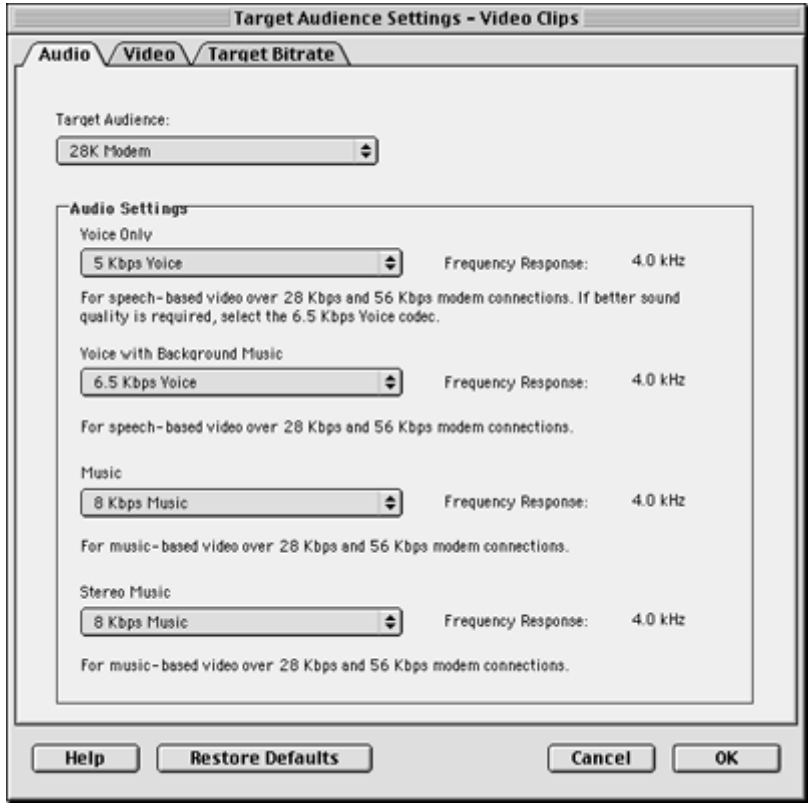
Settings for Video Clips

Target audience settings for video clips are used to determine how RealProducer Plus creates RealMedia from your combined audio and video input when various target audiences are selected. These settings include an audio codec, a video codec, maximum frame rate, and target bit rate.

➤ To modify target audience settings for video clips:

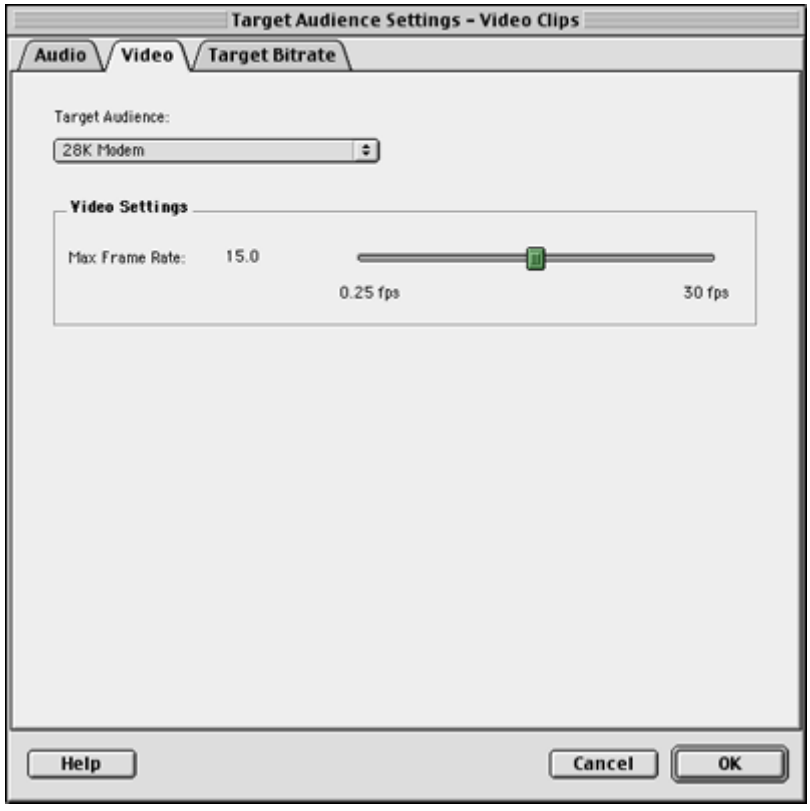
1. In the main RealProducer Plus window, choose **Target Audience Settings>for Video Clips** from the **Options** menu.

   The Target Audience Settings - Video Clips dialog opens to the Audio page.



2. Select a Target Audience from the list of target bit rates. See "Monitoring Recording Statistics" on page 34 for more information.
3. Select an audio codec for each type of audio format.

   When you select a codec, read the description below. This helps you determine whether the codec is appropriate for the target audience. The frequency response supported by the codec is also listed.
4. Click the Video tab.

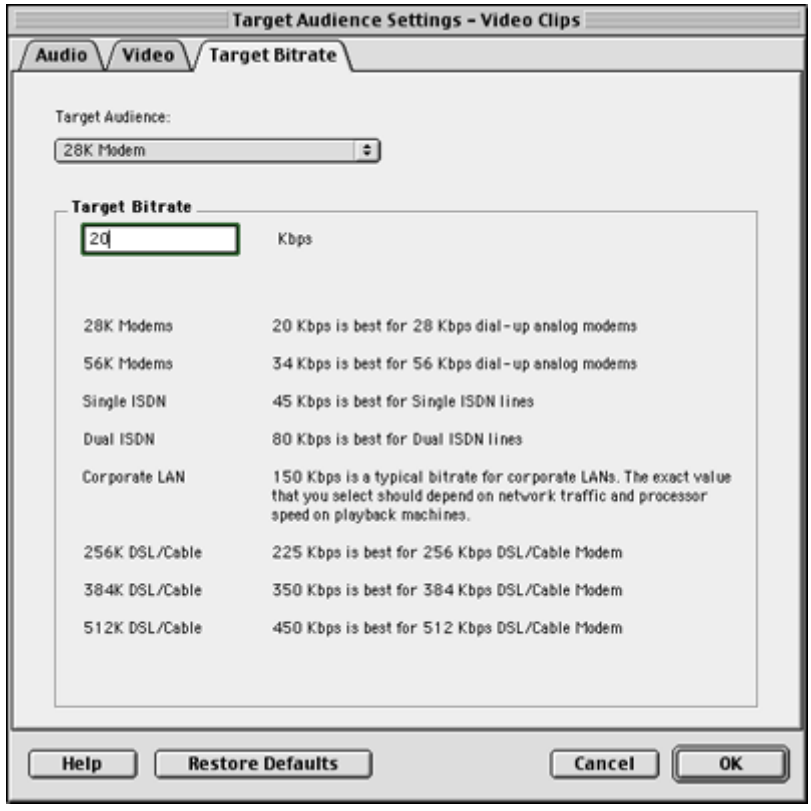


5. Choose a **Max Frame Rate** setting by sliding the bar. This sets the maximum frame rate at which you want to record video.

   At lower values, the output emphasizes image clarity at the expense of smooth-looking motion. For example, if your content contains a lot of motion and you set the slider closer to the 7.5 fps setting, the resulting video image will be clearer, but will exhibit choppier motion.

   You cannot set the frame rate higher than the input file's frame rate.

6. Click on the Target Bit Rate tab.



7. Enter the **Target Bit Rate** for the entire encoded file.

   Generally, you should reduce the expected total bit rate by 25% to compensate for connection and packet overhead. For example, choose 20 Kbps for a 28.8 Kbps modem.

8. Click **OK** to save the target audience with the new settings and return to the main window.

Tip

You can click **Restore Defaults** at any time during the above steps to delete your changes and return the target audience to its original settings.

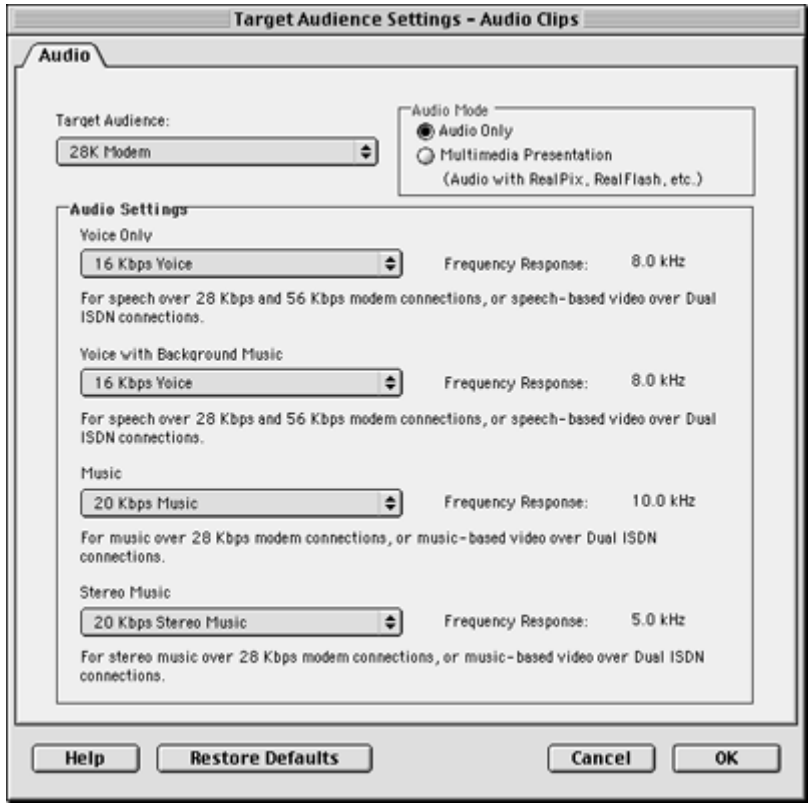
Settings for Audio-Only Clips

Target audience settings for audio clips are used to determine how RealProducer Plus creates RealAudio from your audio-only input when various target audiences are selected. These settings include an audio codec and whether you are creating a stand-alone clip, or for use in a multimedia presentation with other RealMedia (RealVideo, RealPix, and RealText).

➤ To modify a target audience for audio-only clips:

1. In the main RealProducer Plus window, choose **Target Audience Settings>for Audio Clips** from the **Options** menu.

The Target Audience Settings - Audio Clips dialog opens.



2. Select a Target Audience from the list of target bit rates.
3. Select an audio codec for each type of audio format.

   When you select a codec, read the description below. This helps you determine whether the codec is appropriate for the selected target audience.
4. Select the **Audio Mode**:
   - Choose **Audio Only** if the RealAudio clip is to be played by itself.
   - Choose **Multimedia Presentation** if the RealAudio clip is to be played as part of a multimedia presentation, such as a SMIL presentation.

5. Click **OK** to save the target audience with the new settings and return to the main window.
6. You can click **Restore Defaults** at any time during the above steps to delete your changes and return the target audience to its original setting.

Changing Video Capture Settings

RealProducer Plus allows you to make other changes to how video is recorded during a session. You can crop out sections of the video input you don't want to record or resize the output.

Cropping the Image

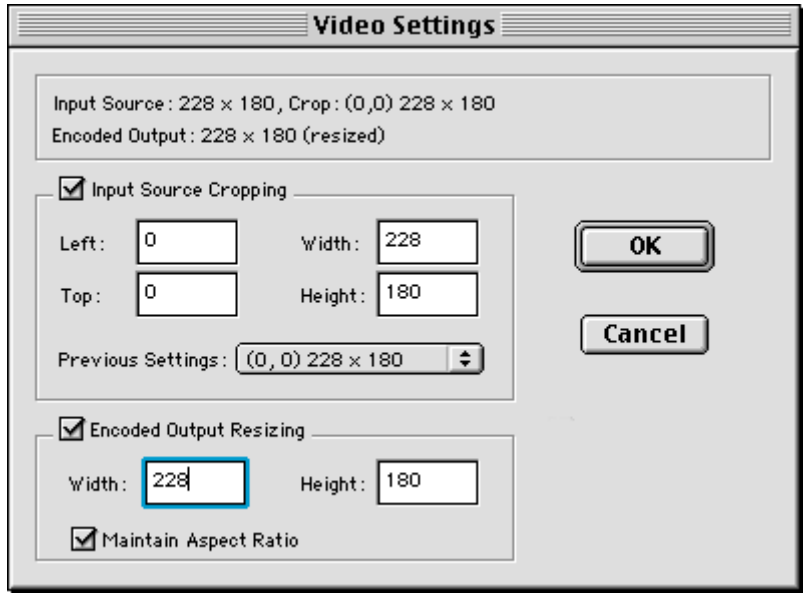
RealProducer Plus's cropping feature allows you to record any portion of a video image that you wish. By cropping an image, you can reduce the overall bit rate of your recorded clip while removing unnecessary image space.

The smallest size that you can crop an image to is 32 x 32.

➤ To crop a video image:

1. From the main window, select **Video Settings** from the **Options** menu.

The Video Settings dialog box opens.



2. Select **Input Source Cropping**.
3. Use **Left**, **Top**, **Width**, and **Height** buttons to adjust the size and location of crop lines. All dimensions will automatically adjust to a multiple of 4.

   Tip

   You can also select from a list of crop settings used previously.

4. Click **OK** to return to the RealProducer Plus main window.
5. Click the **Start** button to start the recording process using the crop settings.

   The cropped image appears in the Encoded Output viewer.

Resizing the Image

RealProducer Plus supports any size image from any video source, but it will automatically crop the height and width to multiples of 4. The most common video image sizes are 160 x 120, 176 x 144 pixels, or 320 x 240 pixels.

We recommend that you do not resize video while capturing live video to a file. In these cases, use your video capture card's settings to change video size.

➤ To resize video output:

1. From the main window, select **Video Settings** from the **Options** menu.

   The Video Settings dialog box opens with the current output size listed at the top.

2. Select **Encoded Output Resizing**.

3. Enter a new **Width** and **Height** for the video.

   The Encoded Output will change to reflect what you enter. All values will be rounded to multiples of 4.

4. Select **Maintain Aspect Ratio** to keep the same ratio between width and height as the original video.

5. Click **OK** to return to the RealProducer Plus main window.

RECORDING TIPS

Because there is no single best process for delivering all types of streaming audio and video, this chapter shows you various tips on how to get the most out of your RealProducer Plus recording session.

This chapter discusses how to improve RealProducer Plus performance, use RealProducer Plus more effectively, produce high-quality audio and video, and edit file information.

Improving RealProducer Plus Performance

A number of factors can influence how much of your system's resources are used during a recording session. Use these tips to get the best performance possible.

Resizing Live Video

We recommend that you do not use RealProducer Plus to resize your video when you are capturing live video input. If you want to change the video size, set the size using your video capture card.

Multiple Streams

Generally, the more streams you create in a SureStream clip, the more processing power you need. Recording for more than two or three customized target audiences that each use a broad range audio codecs, or creating a 5.0 compatible stream can all effect performance.

Use the Statistics dialog to monitor performance, and then adjust target audience settings to get the performance you want. See "Monitoring Real Time Performance" on page 36 and "Customizing Target Audience Settings" on page 66 for more information.

Disabling Viewers

By disabling the input source window, the output source window, and the audio level meter during live recording, you can lower the amount of processing power needed to record. Consequently, you can decrease the time it takes to record your clip.

➤ To disable viewers during recording:

1. Choose the **View** menu from the main RealProducer Plus window.

   Viewers that are currently active are designated with a checkmark:

   - Input Source
   - Encoded Output
   - Audio Meter

2. Select a viewer to disable it.

Using RealProducer Plus Effectively

RealProducer Plus has features that allow you to more easily use RealProducer Plus and increase efficiency while recording your media clips. Here you will learn how to view different video outputs and drag-and-drop clips into RealProducer Plus.

Selecting a Video Output

Even though only one Output Viewer is shown in the main window, you can use it to view the different video streams that are being created when you record a video clip. Using this feature, you can monitor the true output as it will appear to the audience.

➤ To select a video output:

1. Create a new recording session with a video output.
2. Select more than one target audience.
3. Start recording.

   The video stream with the highest bandwidth appears in the Output Viewer.

4. Press **Control** and click on the Output Viewer.

   A menu lists all video streams being creating in this recording session.

5. Select a bandwidth to monitor the video stream in the Output Viewer.

Drag-and-Drop Recording

RealProducer Plus supports drag-and-drop recording. This feature allows you to quickly convert an input audio or video file into RealMedia.

➤ To use drag-and-drop with RealProducer Plus:

1. Click an input file icon and drag it onto an open RealProducer Plus window.

   This opens a new session with path and file name information entered appropriately.

2. Enter any descriptive information (title, author, and copyright) and customize recording settings before clicking **Start**.

You can also record multiple files at once using RealProducer Plus. Select all input files that you want to convert to RealMedia, and drag them onto the RealProducer Plus main window.

Producing High-Quality Audio

This section describes how to successfully create quality sound for RealMedia clips. It gives you overall audio tips, describes audio sampling rates, and shows you how to use the audio level meter.

General Audio Tips

Follow these tips in order to get the best quality from your audio files.

- Use high-quality source files.
- If your original audio file signal exceeds the acceptable amplitude range, the file may be "clipped." Clipping can give rise to clicks or pops on playback. If your source file contains a clipped signal, your final RealMedia file will have high-frequency background noise or static. Lowering the input volume will help reduce clipping.
- Cut any unnecessarily long silences from the beginning or end of the output file to conserve space.

Audio Sampling Rates

The following sampling rates for your source audio are supported for this version of the product. For fuller sound, use the higher sampling rates and a better audio codec.

- 8000 Hz
- 11025 Hz
- 16000 Hz
- 22050 Hz
- 32000 Hz
- 44100 Hz

Using the Audio Level Meter

While you record RealMedia clips, you can monitor the Audio Level to be sure you are encoding the optimal dynamic range. Green indicates a normal reading. Red warns that you are close to an over-modulated input. The best sound quality will occur when the top red bar is often lit but the clipping indicator (the red light above the meter) is never lit.

Clear the clipping indicator during recording by clicking on it. This allows you to track if audio clipping is occurring without watching the audio level constantly.

Producing High-Quality Video

This section describes how to successfully create quality video for RealMedia clips. Follow these tips in order to get the best quality from the different types of video sources.

Video Formats

When using an external video source, start with the best possible quality. In particular, different video formats yield different qualities when captured (digitized).

The common video formats in order of quality are:

- Betacam-SP, also known simply as Beta. This format is common among video production professionals.

- Laserdisc or DVD
- S-VHS or Super-VHS
- VHS

Video playback devices commonly have two types of video outputs, S-video and composite. S-video produces better results.

Recommended Video Types

In order to get high quality output, your video source should meet the following requirements organized by video type.

QuickTime Files

- Use 24-bit RGB QuickTime video files.
- Use 8-bit or 16-bit mono and stereo audio.

MPEG-1 Files

- Use high audio and video stream rates for best quality.
- MPEG-2 files are not supported.

Video Capture Devices

- When using an external video source, start with the best possible quality. In particular, different video formats yield different qualities when captured (digitized).

  The common video formats in order of quality are:

  - Betacam-SP, also known simply as Beta. This format is common among video production professionals.
  - Laserdisc or DVD
  - S-VHS or Super-VHS
  - VHS
- Video playback devices commonly have two types of video outputs, S-video and composite. S-video produces better results.

Editing File Information

RealProducer Plus gives you the ability to change information about a saved RealMedia file. You can change either clip information (title, author, copyright, description, or keywords) or file properties (allow recording, allow download, indexing, and audience rating).

This feature is useful if you want to create a media clip, but don't want to enter keywords or a description. You can then add them at a later date.

➤ To edit file information:

1. In the RealProducer Plus main window, select **File>Edit RealMedia File**.

   The Edit RealMedia File dialog opens with any current information listed.

2. Enter any new clip information for the RealMedia file.
3. Enter any new file properties for the RealMedia file.
4. Click **Play** to view the new file.
5. Click **Save** to save the new file and return to the RealProducer Plus main window.

Creating Keywords

A new feature in this version of RealProducer Plus is the ability to add keywords to your clip. The keywords allow you to give search engines a way to recognize your streaming media.

Since RealMedia clips do not contain text like normal Web pages, the only way that your audience can search for your clip is through the keywords that you specify. Therefore, choosing the best keywords is vital. Three to four words should be all you need.

For example, if you are creating a RealVideo clip of ABC Corporation's CEO, Pat Jones, giving the fourth-quarter financial report, the keywords might be:

```
ABC Corporation, Pat Jones, Q4, report, investments, finance
```

USING APPLESCRIPT

RealProducer Plus is installed with an AppleScript version that allows you to create streaming media files (.rm files). You should be completely familiar with AppleScript and RealProducer Plus before you read this chapter.

Commands

The following tables describe the different commands necessary to create a recording session. See “Examples” below to see how to use them in an AppleScript file.

Session Parameters

Sets the input and output parameters for a recording session from an input file.

Parameter Descriptions

Parameter	Accepted Values	Description
Input	any valid file name	file to be encoded; either Input or Input Folder parameter is required
Input Folder	any valid folder	folder containing files to be encoded
Output	any valid file name	name of the output .rm file; either Output or Output Folder parameter is required
Output Folder	any valid folder	folder for the output files

Broadcast Server Parameters

Sets the parameters for the RealServer used for live broadcasts.

Parameter Descriptions

Parameter	Accepted Values	Description
Address	any valid server address	the address of the server used for broadcast; either the host name or the IP address
Port	any valid port nuber	the number of the port used for broadcasts
File	any valid file name	name of the output .rm file
User	any valid user name	user name for connecting to the server
Password	any valid password	password used for authentication

Live Session Parameters

Sets parameters for a live capture recording session.

Parameter Descriptions

Parameter	Values Accepted	Description
Video Driver	string	name of the QuickTime video driver used
Video Source	Composite sVideo RGB RGB Sync YUV YUV Sync TV SDI	video format used to capture video
Video Standard	NTSC PAL Secam	video standard used to capture video
Video Width	integer	width of the video capture (default: 160)
Video Height	integer	height of the video capture (default: 120)
Audio Driver	string	name of the QuickTime audio driver used
Audio Source	string	the source of the audio capture
Output	any valid file name	name of the output .rm file

(Table Page 1 of 2)

Parameter Descriptions (continued)

Parameter	Values Accepted	Description
Broadcast	True or False	used when using the default settings
Duration	HH:MM:SS.SS	amount of time for the capture session
Video Capture	True or False	use when not defining other video settings to trigger video capture
Audio Capture	True or False	use when not defining other audio settings to trigger audio capture

(Table Page 2 of 2)

Encoding Parameters

Sets the encoding parameters for the recording session.

Parameter Descriptions

Parameter	Values Accepted	Description
Target Audience	Modem_28k Modem_56k ISDN Dual_ISDN Corporate_LAN DSL_Cable_Modem_256k DSL_Cable_Modem_384k DSL_Cable_Modem_512k	target audiences used for encoding; you may use more than one if File Type is set to SureStream (default: last selected)
Audio Format	Voice Only Voice with Background Music Music Stereo Music	type of audio used (default: last selected)
Video Quality	Normal Motion Smoothest Motion Sharpest Image Slide Show	type of video used (default: last selected)
File Type	Single Rate SureStream	type of file to be encoded (default: last selected)
Backwards Compatibility	true or false	create a stream compatible with older versions of the RealPlayer (default: last selected)
Audio Encoding	true or false	whether or not the audio input will be encoded (default: true)

(Table Page 1 of 2)

Parameter Descriptions (continued)

Parameter	Values Accepted	Description
Video Encoding	true or false	whether or not the video input will be encoded (default: true)
Clip Title	any string	title of the clip (default: name of the encoded file)
Clip Author	any string	name of the clip's author
Clip Copyright	any string	copyright date and owner
Clip Keywords	any string	words that a search engine would use to find the clip
Clip Description	any string	brief summary of the clip
Emphasize Audio	true or false	whether or not you want audio to be emphasized during limited bandwidth conditions; cannot be used with Emphasize Video
Emphasize Video	true or false	whether or not you want video to be emphasized during limited bandwidth conditions; cannot be used with Emphasize Audio
Allow Recording	true or false	whether or not you want your audience to be able to record your clip with RealPlayer Plus
Allow Download	true or false	whether or not you want your audience to be able to save your clip onto their computers
Allow Indexing	true or false	whether or not search engines are allowed to list your clip
Rating	G PG R NC	the audience rating of the clip
Show Input Source	true or false	whether or not the input window is shown (default: true)
Show Encoded Output	true or false	whether or not the output window is shown (default: true)
Show Audio Meters	true or false	whether or not the audio meter is shown (default: true)

(Table Page 2 of 2)

Configure Video

Sets video settings for a target audience.

Parameter Descriptions

Parameter	Values Accepted	Description
Target Audience	Modem_28k Modem_56k ISDN Dual_ISDN Corporate_LAN DSL_Cable_Modem_256k DSL_Cable_Modem_384k DSL_Cable_Modem_512k	choose one target audience to set
Video Codec	G2 G2_SVT	the video codec used to encode video
Max Frame Rate	any real number (up to 30)	the maximum frame rate of the output clip

Configure Audio

Sets audio settings for a target audience.

Parameter Descriptions

Parameter	Values Accepted	Description
Target Audience	Modem_28k Modem_56k Dual_ISDN Corporate_LAN DSL_Cable_Modem_256k DSL_Cable_Modem_384k DSL_Cable_Modem_512k	choose one target audience to set
Audio Format	Voice Only Voice with Background Music Music Stereo Music	choose one audio format to set; if not specified, will use the Encoding Parameters setting

(Table Page 1 of 2)

Parameter Descriptions (continued)

Parameter	Values Accepted	Description
Audio Codec	Voice6_5 Voice8_5 Voice5 Voice16 Voice32 Voice64 Music6 Music8 Music11 Music16 Music20 Music32 Music44 Music64 StereoMusic20 StereoMusic32 StereoMusic44 StereoMusic64 StereoMusic94	the actual audio codec used during encoding; use either this parameter or Audio Codec ID plus Audio Codec Flavor parameters
Audio Codec ID	string	name of the codec; with Audio Codec Flavor, an alternative to Audio Codec
Audio Codec Flavor	integer	bit rate of the codec; use with Audio Codec ID

(Table Page 2 of 2)

Configure Bit Rate

Sets bit rate settings for a target audience.

Parameter Descriptions

Parameter	Values Accepted	Description
Target Audience	Modem_28k Modem_56k ISDN Dual_ISDN Corporate_LAN DSL_Cable_Modem_256k DSL_Cable_Modem_384k DSL_Cable_Modem_512k	choose one target audience to set
Bit Rate	any real number	the target bit rate of the output clip

Video Codec Preferences

Allows you to set various preferences for the video codec.

Parameter Descriptions

Parameter	Values Accepted	Description
Two Pass Encoding	true or false	analyze static files prior to encoding
Variable Bitrate	true or false	increase quality by varying the bit rate
Loss Protection	true or false	protect against packet loss
VBR Latency	any integer	the maximum startup latency (in seconds)
Keyframe Frequency	any integer	the maximum time between keyframes (in milliseconds)

Video Filter Preferences

Allows you to use video filters during video encoding.

Parameter Descriptions

Parameter	Values Accepted	Description
Noise Filtering	Off High Low	type of noise filtering allowed during recording
Resize Filter	Fast High Quality	the quality of filtering for resized video
Inverse Telecine	true or false	removes extra frames caused by the telecine (24 fps to 30 fps) conversion process
Deinterlace	true or false	cleans video artifacts

Crop

Crops the output video to dimensions that you set.

Parameter Descriptions

Parameter	Values Accepted	Description
Width	any integer	the width of the output video (in pixels)
Height	any integer	the height of the output video (in pixels)
Left	any integer	left offset of the output video (in pixels)
Top	any integer	top offset of the output video (in pixels)

Resize

Changes the size of the output video.

Parameter Descriptions

Parameter	Values Accepted	Description
Width	any integer	the width of the resized output video (in pixels)
Height	any integer	the height of the resized output video (in pixels)

Start

Starts encoding. (No parameters needed.)

Examples

The following AppleScript example records foo.mov into a RealMedia file for 28 and 56 Kbps audiences, audio set to voice only, video set to normal, file type set to SureStream, and "The Title" as the title of the clip. The output file is called foo.rm and is cropped.

```
tell application "Real Producer Plus"
        with timeout of 99999 seconds
        activate
```

```
        Session Parameters Input file "MyComputer:Movie Files:foo.mov" Output¬
        file "MyComputer:Movie Files:foo.rm"

        Encoding Parameters Target Audience {Modem_28K, Modem_56K} Audio¬
        Format Voice Only Video Quality Normal Motion Clip Title "The Title"

        Crop Left 39 Top 88 Width 112 Height 84

        Start

        end timeout

end tell
```

Note

You have to set a large timeout value, or the AppleScript RealProducer Plus will quit before encoding is finished.

The following example configures video, audio, and bit rate target audience settings for 28 and Dual ISDN modems, then it encodes all files within the Movie Files folder using these settings.

```
tell application "Real Producer Plus"

        with timeout of 99999 seconds

        activate

        Configure Video Target Audience Modem_28K Max Frame Rate 15.0

        Configure Audio Target Audience Modem_28K Audio Format Voice Only¬
        Audio Codec Voice6_5

        Configure BitRate Target Audience Modem_28K Bit Rate 20.0

        Configure Video Target Audience Dual_ISDN Max Frame Rate 15.0

        Configure Audio Target Audience Dual_ISDN Audio Format Voice Only¬
        Audio Codec Voice8_5

        Configure BitRate Target Audience Dual_ISDN Bit Rate 80.0

        Session Parameters Input Folder "MyComputer:Movie Files" Output Folder¬
        "MyComputer:Movie Files"

        Encoding Parameters Target Audience {Modem_28K, Dual_ISDN} Video¬
        Quality Normal Motion Clip Title "The Title"

        Start

        end timeout

end tell
```

The following example configures video, audio, and bit rate target audience settings for DSL/Cable modems and Corporate LANs, then it encodes a live video capture.

```
tell application "Real Producer Plus"
        with timeout of 99999 seconds
        activate
        Configure Video Target Audience DSL_Cable_Modem Max Frame Rate 15.0¬
        Video Codec G2
        Configure Audio Target Audience DSL_Cable_Modem Audio Format Music¬
        Audio Codec Music32
        Configure BitRate Target Audience DSL_Cable_Modem Bit Rate 220.0
        Configure Video Target Audience Corporate_LAN Max Frame Rate 15.0¬
        Video Codec G2
        Configure Audio Target Audience Corporate_LAN Audio Format Music¬
        Audio Codec Music32HighResponse
        Configure BitRate Target Audience Corporate_LAN Bit Rate 150.0
        Live Session Parameters Video Driver "ATI Video Digitizer" Video Source¬
        Composite Video Standard NTSC Video Width 160 Video Height 120 Audio¬
        Driver "Built-in" Audio Source "Sound In" Output "MyComputer:Dekstop¬
        Folder:test.rm:" Duration "00:01:00.000"
        Encoding Parameters Target Audience {DSL_Cable_Modem,Corporate_LAN}¬
        Audio Format Music Video Quality Normal Motion File Type SureStream¬
        Clip Title "A Slug's Life" Clip Author "F. Ritz" Clip Copyright "©1999" Clip¬
        Keywords "slugs childhood friendship" Clip Description "an amusing story¬
        about a boy and his pet slug" Noise Filtering Off Rating General with¬
        Emphasize Audio without Show Input Source, Show Encoded Output,¬
        Backwards Compatibility, Allow Recording, Allow Download and Allow¬
        Indexing
        Start
        end timeout
end tell
```

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